PB82-148172

Highway Construction Noise Field Measurements Site 4: 1-75 (Florida) (Appendix D)

Wyle Labs./Wyle Research
Arlington, VA

Prepared for

Environmental Protection Agency
Washington, DC

Oct 81

U.S. Department of Commerce
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16. ABSTRACT

This study investigated the noise associated with highway construction activities. It involved the identification and examination of: highway construction activities, noise characteristics associated with highway construction activities, availability of highway construction noise abatement measures, demonstration of construction site noise abatement measures, and development of a computer-based model for use as a tool to predict the noise impact of construction activities and to plan mitigation measures. The model was developed for use on the FHWA computer (IBM 360).

A total of seven reports were prepared in this study and have been released for public distribution.

Reports (Part D through Part G) contain field data gathered at the field demonstrations at highway construction sites in: Route I-201, California; I-205, Oregon; I-95/I-395, Maryland; and I-75, Florida. They contain noise data on single and multiple pieces of equipment, provide general description of highway site activities, and activity analyses of equipment.

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APPENDIX D

HIGHWAY CONSTRUCTION NOISE FIELD MEASUREMENTS
SITE 4: I-75 (FLORIDA)

October 1981

Office of Noise Abatement & Control
U. S. Environmental Protection Agency
Washington, D. C. 20460

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APPENDIX D

HIGHWAY CONSTRUCTION NOISE FIELD MEASUREMENTS

SITE 4: I-75 (FLORIDA)

October 1981

Office of Noise Abatement & Control
U. S. Environmental Protection Agency
Washington, D. C. 20460

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FORWARD

This study was jointly sponsored, through an Interagency Agreement (IAG), by the Office of Noise Abatement and Control (ONAC), U.S. Environmental Protection Agency (EPA), and the Federal Highway Administration (FHWA), U.S. Department of Transportation (DOT). The study was conducted by Wyle Laboratories under contract to FHWA Contract No. DOT-FH-11-9455. Wyle Research of El Segundo, California, and Wyle Research of Arlington, Virginia, performed the study.

The object of the study was to investigate and study the noise associated with highway construction activities. The study involved the identification and examination of: highway construction activities, noise characteristics associated with highway construction activities, availability of highway construction noise abatement measures, demonstration of construction site noise abatement measures, and development of a computer-based model for use as a tool to predict the noise impact of construction activities and to plan mitigation measures. The model was developed for use on the FHWA computer (IBM 360).

The principal project officers for Wyle Laboratories on this project were Mr. William Fuller of Wyle Research in El Segundo and Dr. Kenneth Plotkin of Wyle Research of Arlington, Virginia.

The government project managers for the study were Mr. Fred Romano of FHWA, and Mr. Roger Heymann of EPA/ONAC.

The various technical reports completed by Wyle under this contract and submitted to FHWA have been released for public distribution by EPA.

PREFACE

This study involved a comprehensive review of the environmental noise associated with highway construction activities. A total of seven reports have been released for public distribution. These reports are:

1. Analysis and Abatement of Highway Construction Noise, EPA 550/9-81-314-A, September 1981.
2. A Model for the Prediction of Highway Construction Noise, EPA 550/9-81-314-B, September 1981.
3. IBM 360/System Batch Version of Highway Construction Noise Model, EPA 550/9-81-314-C, September 1981.
4. Appendix A, Highway Construction Noise Field Measurements, Site 1: I-201 (California), EPA 550/9-81-314-D, September 1981.
5. Appendix B, Highway Construction Noise Field Measurements, Site 2: I-205 (Oregon), EPA 550/9-81-314-E, September 1981.
6. Appendix C, Highway Construction Noise Field Measurements, Site 3: I-95/I-395 (Maryland), EPA 550/9-81-314-F, September 1981.
7. Appendix D, Highway Construction Noise Field Measurements, Site 4: I-75 (Florida), EPA 550/9-81-314-G, September 1981.

The first two reports (Part A and Part B) might be considered the principal reports since they are relatively self-contained units on this study's efforts, the engineering studies and the computer model, respectively. In this regard, if there is to be a limited purchase of the reports, one might consider obtaining either or both of Part A and Part B, and obtaining the other reports as additional informational needs arise.

- The first report (Part A) contains all of the information from the engineering study phase of the project. It gives information on highway construction procedures, highway construction site noise characteristics, available abatement measures, and results from field demonstrations on noise abatement.

- The second report (Part B) presents a complete description of the highway noise prediction model. The report contains a description of the model's formulation and construction, a description of the program, and a user's manual.

- The third report (Part C) provides additional information to the Part B report on the highway construction noise model installed at DOT's Transportation Computer Center on an IBM 360 computer. It delineates the differences between the version of the model as installed on the IBM 360 and the two models (HINPUT and HICNOM) operating on the Wyle Computer (PDP-11). The report has additional user's manual information for use on the IBM 360, a programmer's manual describing changes in going from the PDP-11 to the IBM 360, and a maintenance manual.

- Reports 4, 5, 6, and 7 (Part D through Part G) contain field data gathered at the field demonstrations at highway construction sites in: Route I-201, California; I-205, Oregon; I-95/I-395, Maryland; and I-75, Florida. They contain noise data on single and multiple pieces of equipment, provide general description of highway site activities, and activity analyses of equipment.

APPENDIX D

This appendix summarizes field measurements performed at the I-75 (Florida) construction site during January 1980. While the total construction encompassed 120 miles of right-of-way, the field noise measurement program focused on the St. Petersburg section, consisting of 25 miles of the I-75 project just south of the City of St. Petersburg. The highway alignment passed through flat, rural landscape, many times encountering large stands of trees. Sparse residential areas existed at various locations, but were some distance from the right-of-way. A more detailed description of the site is presented in Section 3.5 of the main report.

The following data and information are presented in this appendix:

1. General highway site description.
2. Noise measurements of activities involving single or multiple pieces of equipment; diagrams describing each activity site are included.
3. Controlled single equipment noise measurements of selected equipment.
4. Equipment activity analysis of selected equipment.

A summary of key construction noise data derived from this site is presented in Section 3.5.3 of the main report.

Measurement Site Data

Highway: I-75

Date: Jan. 1980

Site Location: Earthwork Area I - just south of St. Rd 674, near Ruskin.

Type of Measurements:

☐ Community ☑ Activity ☐ Propagation

☑ Site Boundary ☑ Single Equipment ☑ Movies

Soil/Terrain Conditions: Flat terrain, few trees. Very wet soil

Machinery Description:

1 Cat D7G Dozer
2 Cat D8H Dozers
2 Cat D9G Dozers
4 Cat 631B Scrapers
4 Cat 631C Scrapers
1 Cat 621 Scraper (only operated occasionally

Miscellaneous Information:

Diagrams 1-15A,B,C,D represent a closed loop excavation system where dirt is removed from borrow pit and transported to fill area along highway right-of-way.

DATA LOG SUMMARY

HIGHWAY: I-75

DATE: Jan. 1980

SITE LOCATION: Earthwork Site I

Sample	Location	Date	Time	Dur.	Site Diag.	Comments	Reduced
47-1	EW-1	1-15	0930		1-15A	Fill area; Scrapers unloading	
-2	EW-2	1-15	1000		1-15B	Fill area	
-3	EW-3	1-15	1030		1-15C	Scraper passbys on haul road	
-4	EW-4	1-15			1-15D	w/Movies @ 2 locations; Borrow Pit	
-23	EW-5	1-16			1-16D	Crane dredging in Barrow Pit	
178-1	EW-6	1-17			1-17A	Fill Area; South of EW-1	
158-1	EW-7	1-17			1-17C	Borrow Pit; South of EW-4	
—	EW-8	1-15			1-15E	Well Point Pump (SOUND LEVEL METER)	
47-91	EW-34	1-29			1-29A	Borrow Pit; East edge	
-92	EW-35	1-29			1-29A	Borrow Pit; East side	
-93	EW-36	1-29			1-29B	Borrow Pit; Center of pit	
-94	EW-37	1-29			1-29B 1-29C	Borrow Pit; North edge	
178-6	EW-38	1-29	0930	7:00	1-29A	Borrow Pit; North edge, w/movies	
47-2A	EW-2	1-15	1000		1-15A	Cat D8H IMI's @ 50'	

ACTIVITY NOISE MEASUREMENTS

HIGHWAY: I - 75

DATE: Jan. 1980

SITE LOCATION: Earthwork Site I

Sample	Location	Date	Dur.	L_{eq}	L_{99}	L_{90}	L_{50}	L_{10}	L_1
47-1	EW-1	1-15	:19	74.4	61	65	72	78	82
-2	EW-2	1-15	:11	77.6	65	70	76	82	85
-3	EW-3	1-15	:21	80.7	68	68	70	85	93
-4	EW-4	1-15	:35	86.8	72	77	84	91	95
-23	EW-5	1-15	:04	77.2	73	74	76	79	84
-91	EW-34	1-29	:15	74.6	66	69	73	77	84
-92	EW-35	↓	:17	78.0	70	73	77	80	85
-93	EW-36								
-94	EW-97								

SAMPLES MAY BE TOO CONTAMINATED BY NEAR-FIELD PASSBYS

SITE BOUNDARY/COMMUNITY NOISE MEASUREMENTS

HIGHWAY: I-75 DATE: Jan 1980

SITE LOCATION: Earthwork Site I

Sample	Location	Date	Dur.	L_{eq}
178-1	EW-6	1-17	8:00	64.2
158-1	EW-7	1-17	7:00	73.4
178-6	EW-38	1-28	8:00	67.0

11

SINGLE EQUIPMENT/PROPAGATION NOISE MEASUREMENTS

HIGHWAY: I-75 DATE: Jan. 1980

SITE LOCATION: Earthwork Site I

Sample	Location	Date	Equipment	L_{max} @ ___ ft.	L_{max} @ 50 ft.	L_{max} @ ___ ft.
47-2A	EW-2	1-15	Cat. D8H Dozer		82	
–	EW-8	1-15	Well Point Pump		63	

SINGLE EVENT LEVELS
SINGLE EQUIPMENT/PROPAGATION NOISE MEASUREMENTS

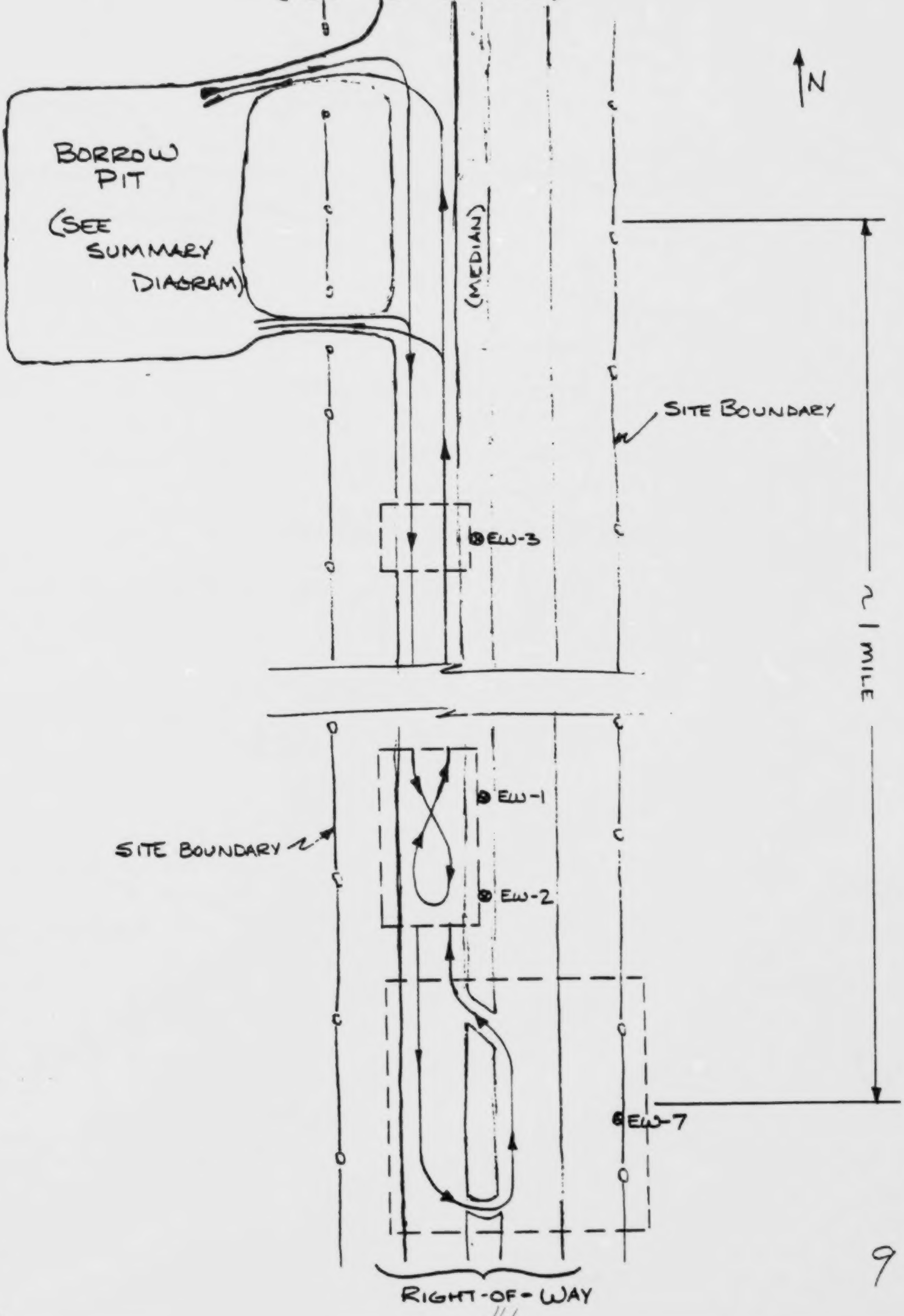
HIGHWAY: I - 75

DATE: 5 Jan 1980

SITE LOCATION: Earthwork Site I

Sample	Location	Date	Equipment	L max @ 50 ft.	L max @ 60 ft.	L max @ 80 ft.
47-3	EW-1	1-15	631C Scraper: Empty		92	
			631C Empty		94	
			631B Full		92	
			631B Full			94
			631C Full			92
			631C Full			84
			631B Empty		92	
			631C(?) Full.			90
			631C Empty		94	
			631B Empty		93	
			631C Full			95
			631C Empty			90
			621 Full			92
			631C Full		92	
			631C Empty		94	
			621 Empty			95
			631C Full			89

SUMMARY DIAGRAM
(NOT TO SCALE)


N
BORROW PIT
(SEE SUMMARY DIAGRAM)
(MEDIAN)
SITE BOUNDARY
EW-3
~1 MILE
EW-1
SITE BOUNDARY
EW-2
EW-7
RIGHT-OF-WAY

SUMMARY DIAGRAM: BORROW PIT
(NOT TO SCALE)

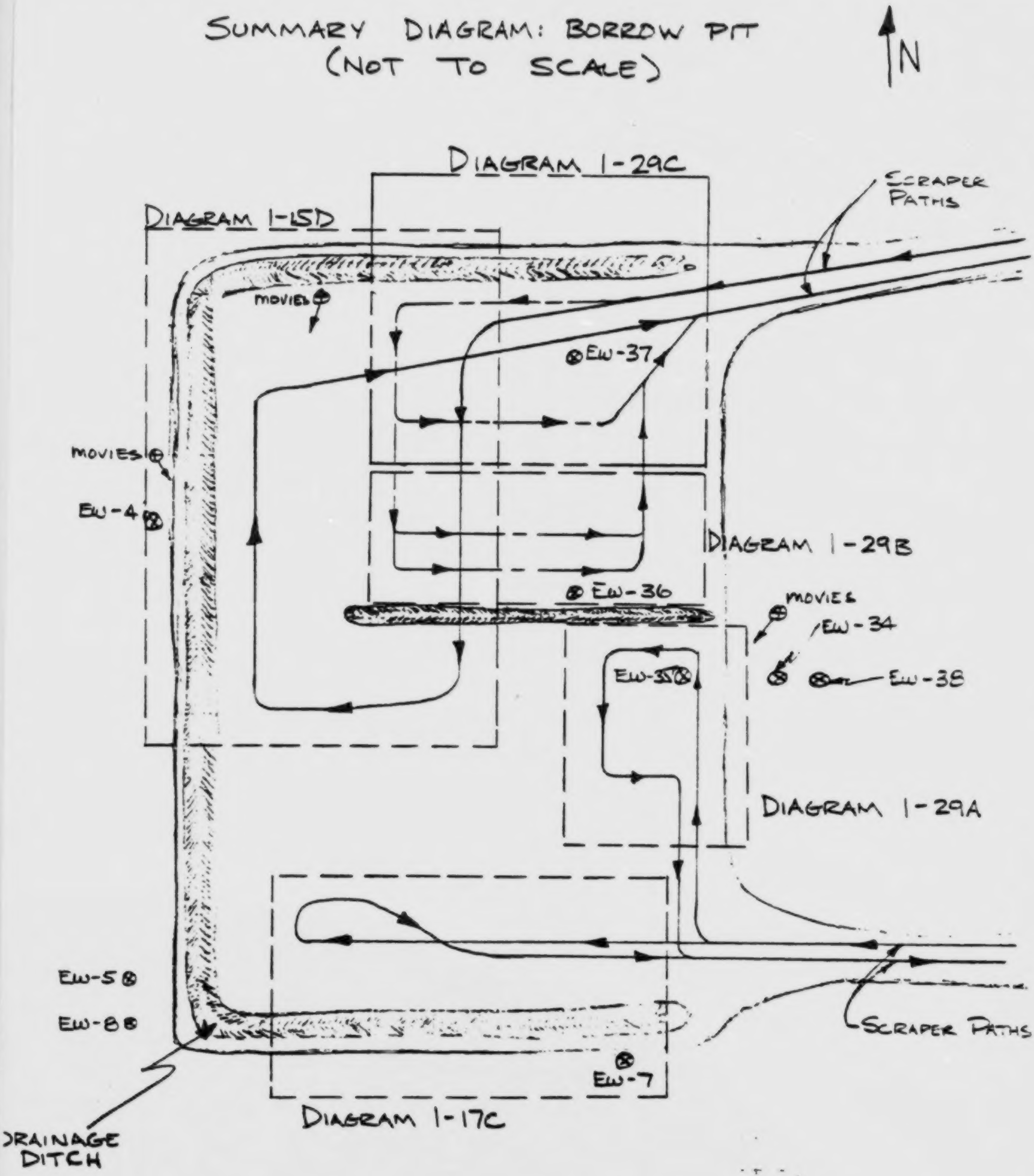
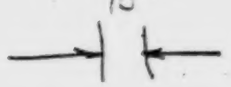
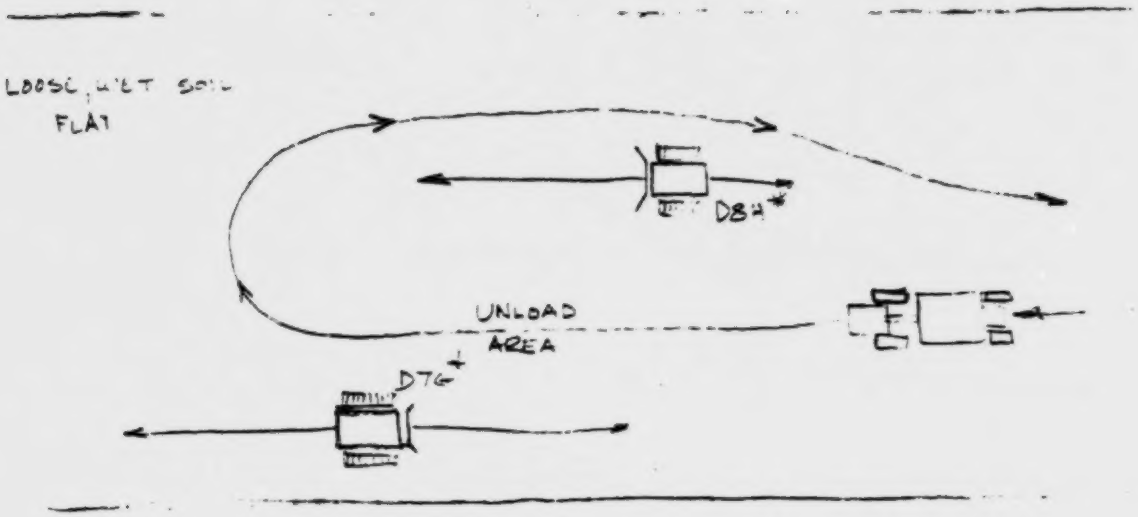

N
DIAGRAM 1-29C
DIAGRAM 1-15D
SCRAPER PATHS
MOVIES
EW-37
MOVIES
EW-4
DIAGRAM 1-29B
EW-36
MOVIES
EW-34
EW-35
EW-38
DIAGRAM 1-29A
EW-5
EW-8
EW-7
SCRAPER PATHS
DIAGRAM 1-17C
DRAINAGE DITCH

DIAGRAM 1-15A
Fill Operation
9:30 am



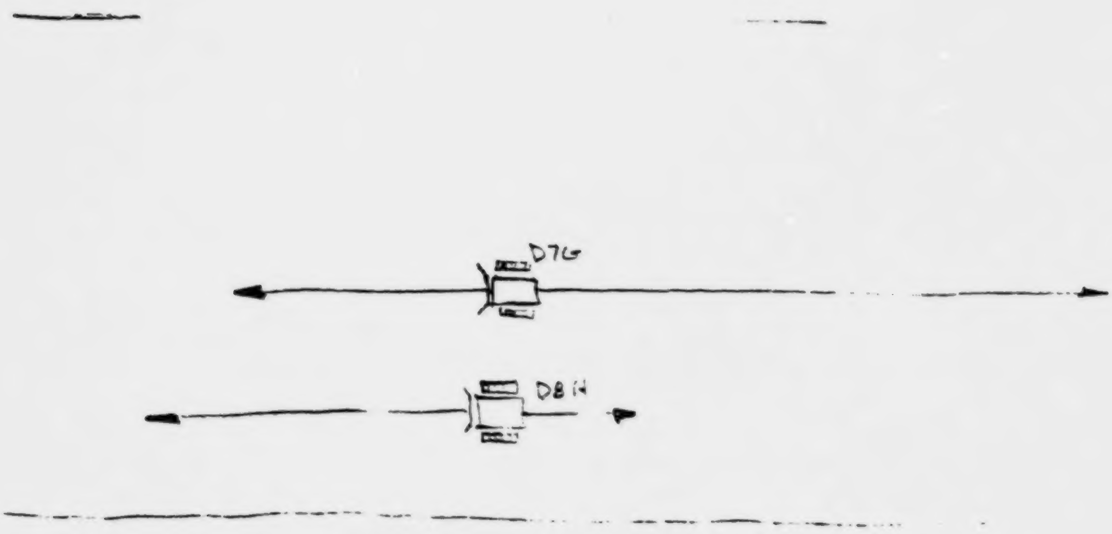

LOOSE, WET SOIL
FLAT
D8H*
UNLOAD
AREA
D7G+

⊗ mic analog #1 (+10dB)

D8H Dozer [illegible] test

Cat D7G with screen engine enclosure
Cat D[illegible] with screen engine enclosure
Cat 631C & B Scrapers } 13 scrapers in 15 minutes
621 Scraper

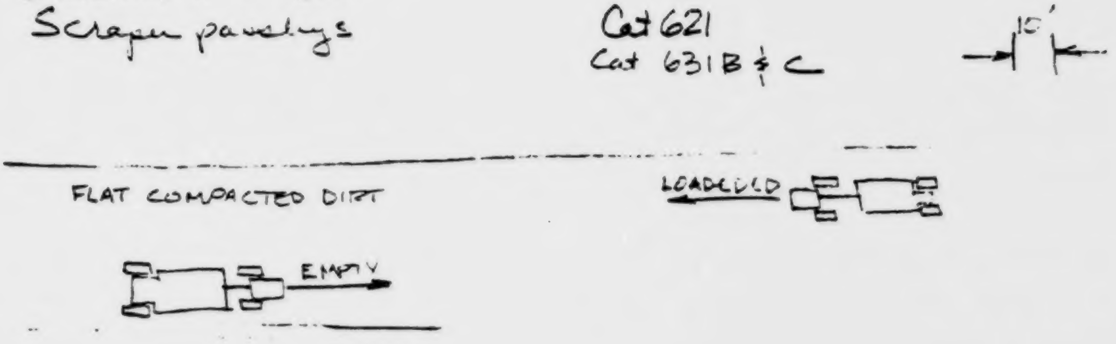
DIAGRAM 1-15B
10:00am
Full Op?
Same equipment as 1-15A



⊗ Analog #2

DIAGRAM 1-15C
Scraper passings

Cat 621
Cat 631B & C


15'
LOADED
FLAT COMPACTED DIRT
EMPTY

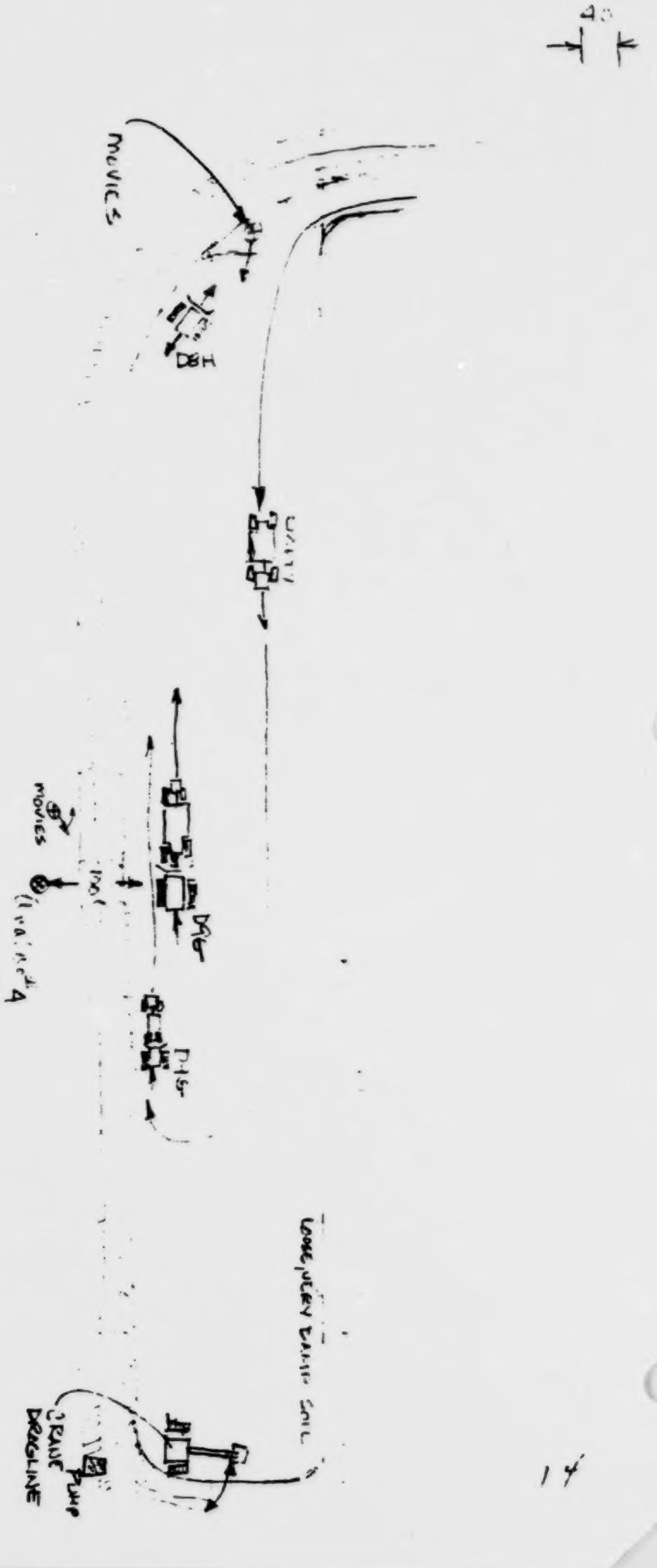
Drawing #3

Scraper speeds: 10 mph loaded
30 mph empty

DIAGRAM 1-15D
BORROW EXCAVATION

2 Cat D9G Dozers
1 Cat D8H Dozer
Cat Scrapers

DIAGRAMS 1-15A, B, C, D REPRESENT A CLOSED LOOP SYSTEM; SAME SCRAPERS IN EACH.


40'
MOVIES
D8H
MOVIES
100'
D9G
D9G
LOOSE, VERY DAMP SOIL
PUMP
CRANE
DRAGLINE

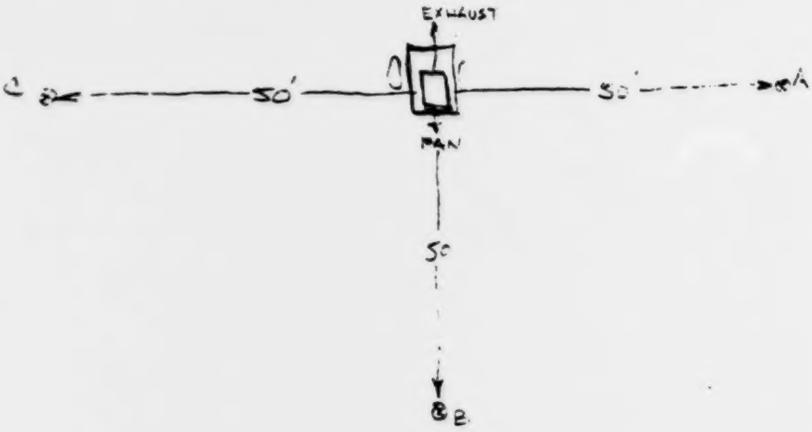
SCRAPER LOADING TIMES:
(TIME WHEN SCRAPER IS BEING PUSHED BY DOZER)

1:05
1:15
1:30
AVG = 1:18

DIAGRAM 1-15E

Well pump
4-cylinder diesel
@ constant RPM

(See Diagram 1-15D for pump location).

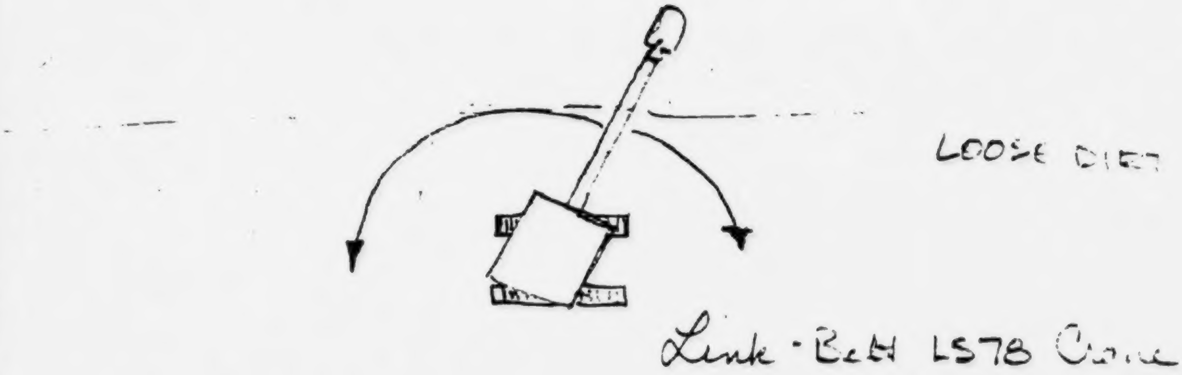

EXHAUST
C
50'
50'
A
FAN
50
B

L max:

A = 63 dB
B = 65
C = 64

Note: pump audible during analog #4 (see diagram 1-15D)

DIAGRAM 1-16D
Dredging


LOOSE DIRT
Link-Belt LS78 Crane

⊗ Analog #23

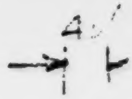
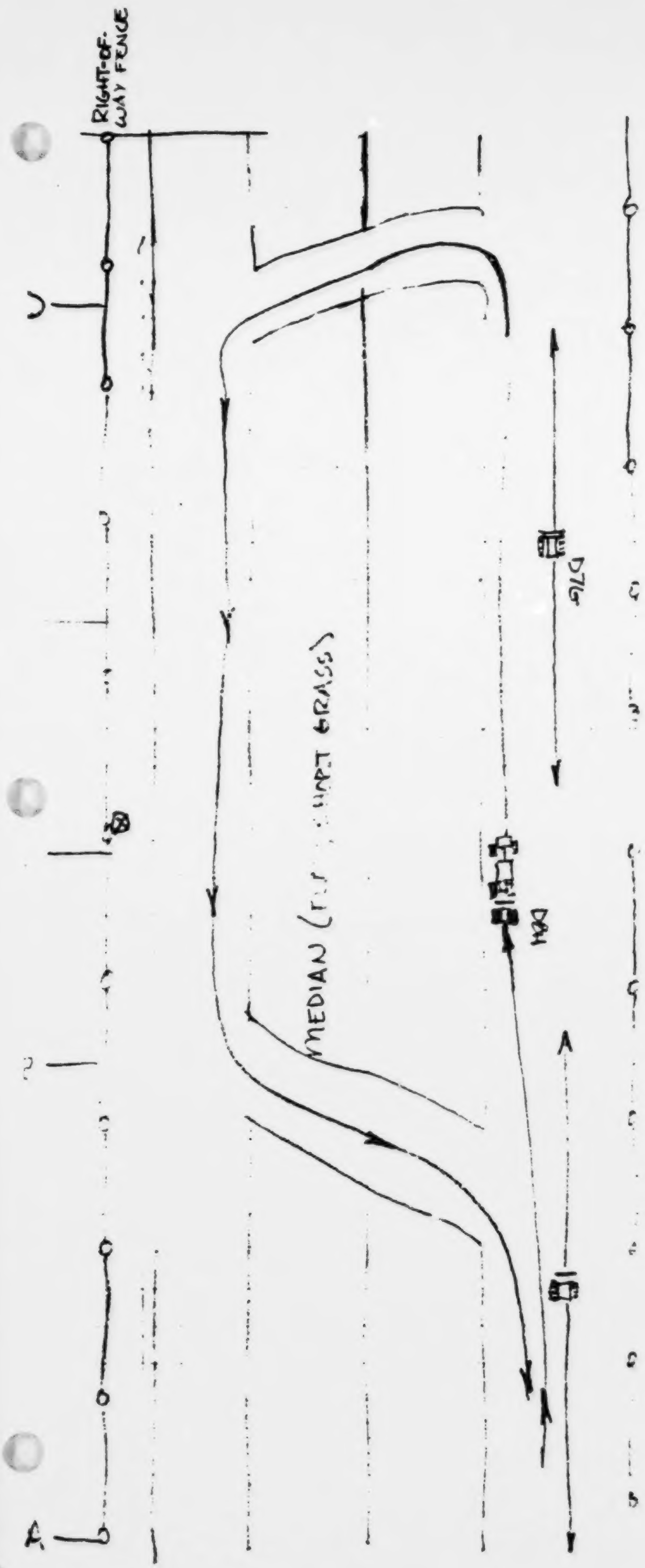


DIAGRAM 1-17A ; FILL Op.

Cat 631B+C Scrap[illegible]
2 Cat D8H Dozer
1 Cat D7G Doz[illegible]

[illegible]dentical equipment as
found on Diagram [illegible]


RIGHT-OF-WAY FENCE
MEDIAN (FILL, SHORT GRASS)
D7G
D8H
A
A

Motion analysis:

SCRAPER:	1	2	3	4
A to C =	3:20	2:3[illegible]	3:25	[illegible]
C to D =	:50	:30	1:50	1:2[illegible]
D to A =	1:15	1:25	1:25	[illegible]

DOZER PUSHING SCRAPER:

A to C =	3:20	2:[illegible]5	3:[illegible]
C to A =	:40	:55	1:[illegible]

DOZER PUSHING [illegible]

A to C = 2:20
C to A = 1:50

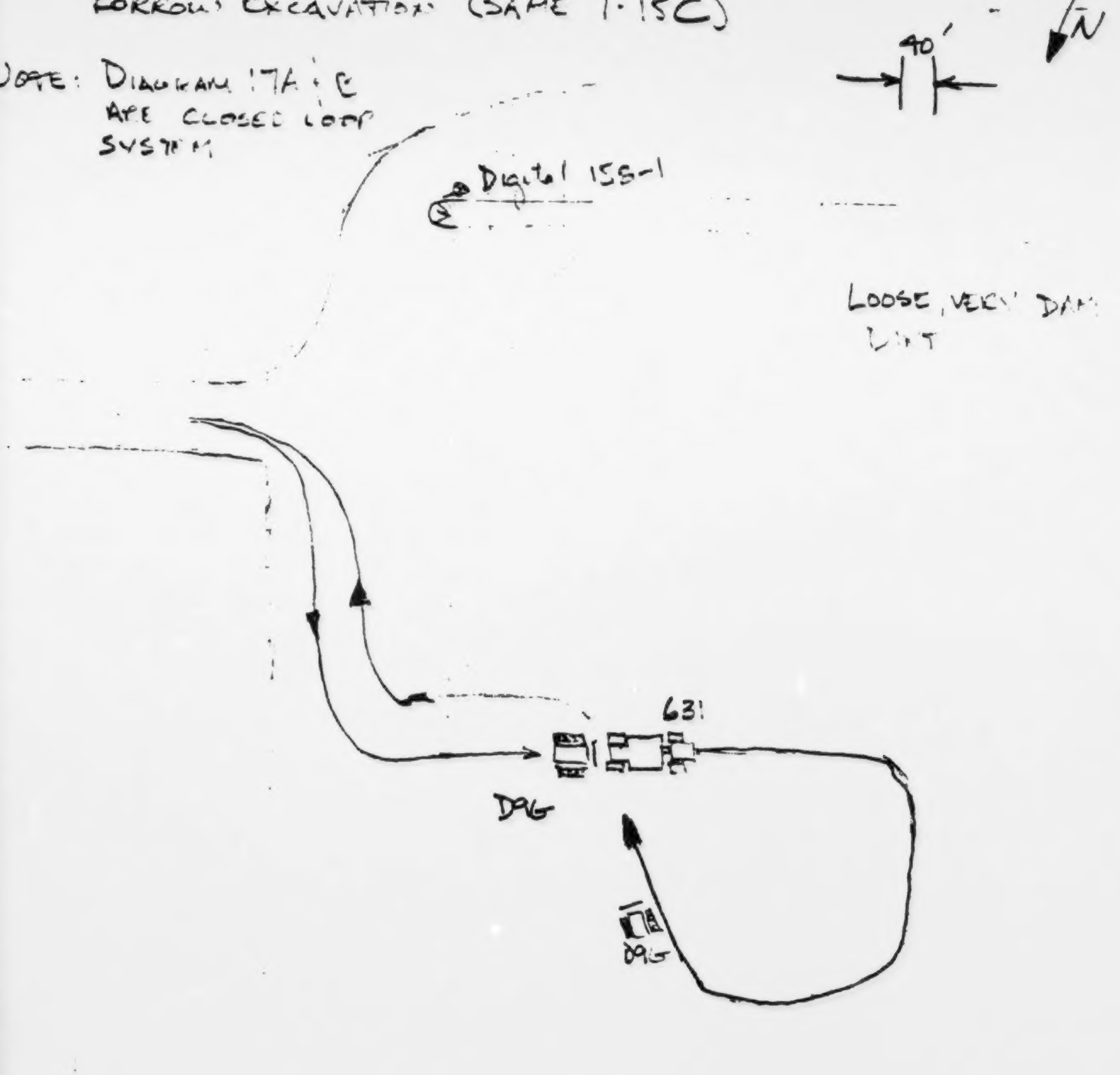
CC to D = :35
D to D = :25

SCRAPERS ROUND TRIP TIME FROM BORROW PIT TO FILL AREA = 15:30
21:15
23:30

22

DIAGRAM 1-17C
BORROW EXCAVATION (SAME 1-15C)

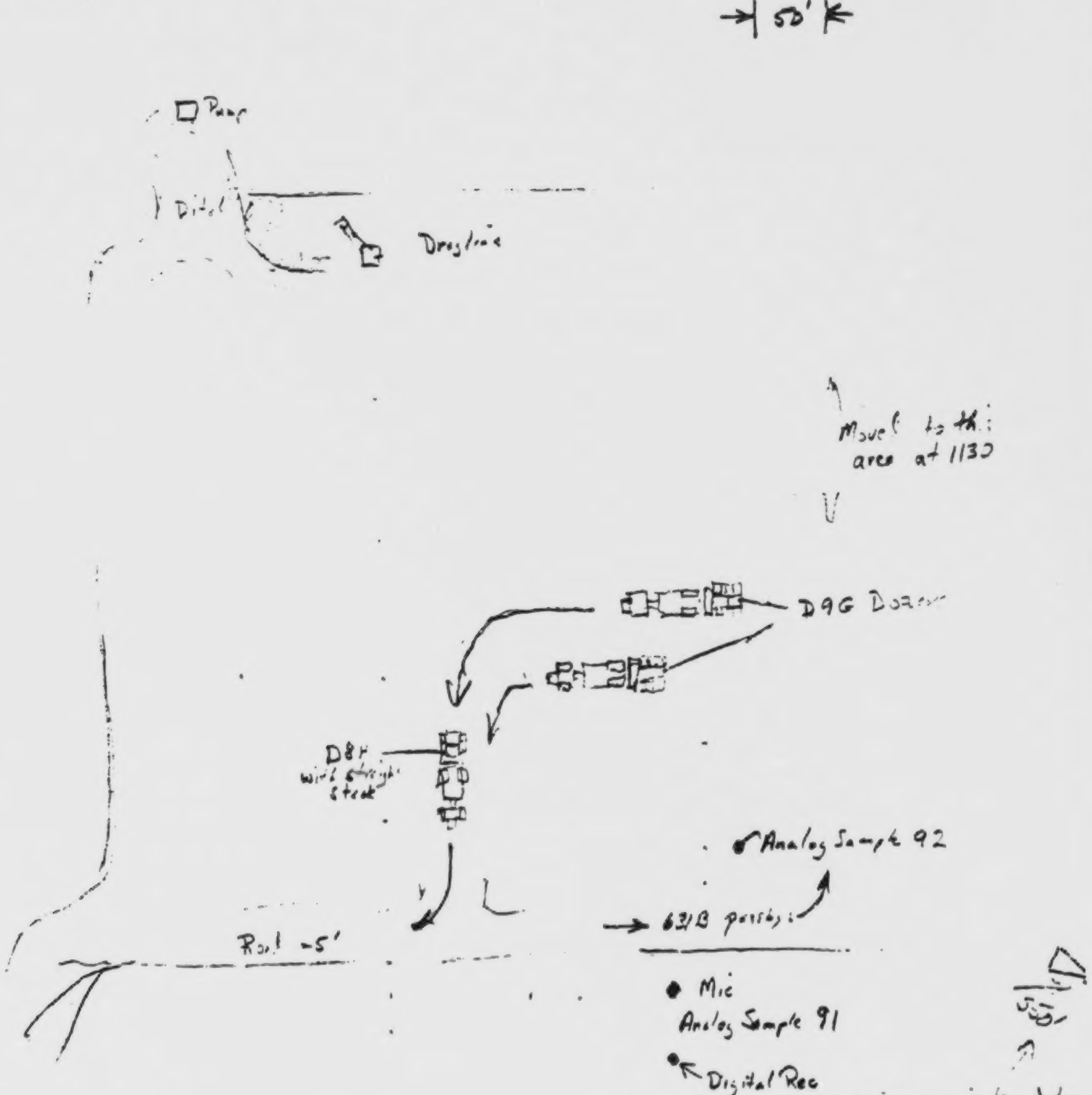
NOTE: DIAGRAM 17A + C
ARE CLOSED LOOP
SYSTEM


40'
N
Digital 155-1
LOOSE, VERY DAMP
DIRT
631
D9G
D9G

23

18

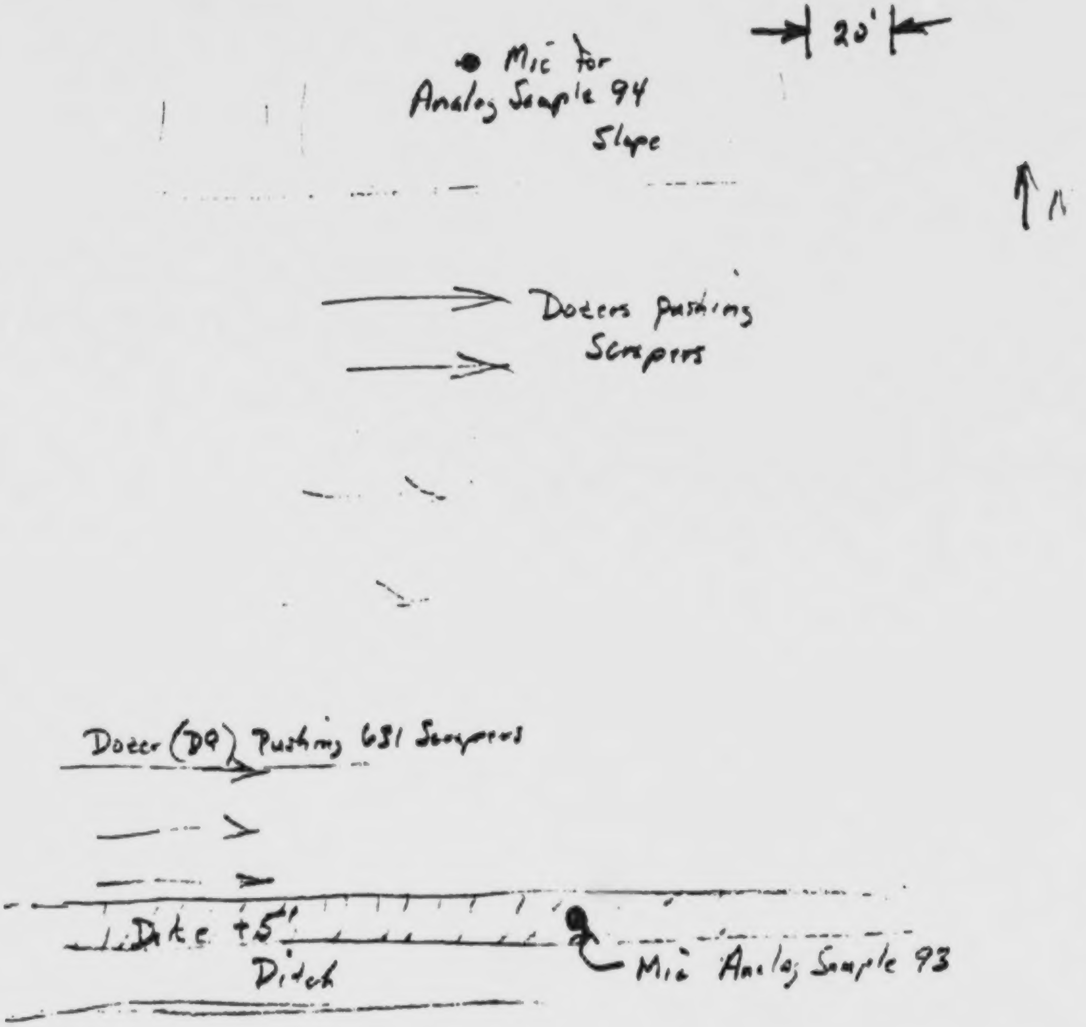
Diagram 1-29 A Borrow Site


50'
Pump
Ditch
Dragline
Moved to this area at 1130
D9G Dozer
D8H with straight stack
Analog Sample 92
Road -5'
631B possible
Mic
Analog Sample 91
Digital Rec
50'

On at 0920 with movie @ 17/55.
Movie Off at 1200

24

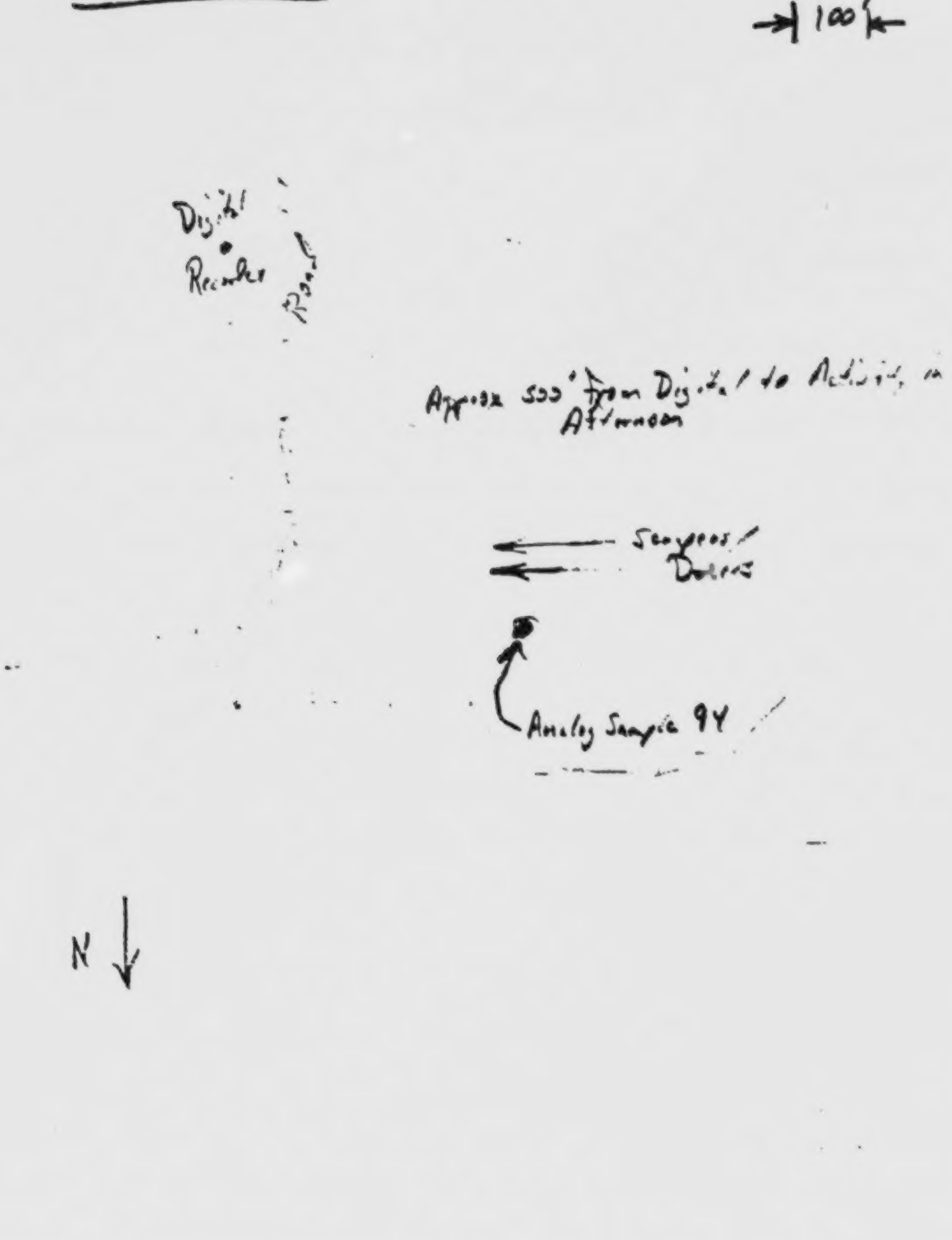
Diagram 1-29B Borrow Pit


20'
Mic for Analog Sample 94
Slope
N
Dozers pushing Scrapers
Dozer (D9) Pushing 631 Scrapers
Dike +5'
Ditch
Mic Analog Sample 93

Sample 93 – Passbys of Dozers pushing scrapers at 50 to 130 ft.

2.0

Diagram 1-29C


100'
Digital Recorder
Road
Approx 500' from Digital to Activity in Afternoon
Scrapers / Dozers
Analog Sample 94
N

Measurement Site Data

Highway: I-75

Date: Jan 1980

Site Location: Earthwork Site II - South of Manatee River near St. Rd 64.

Type of Measurements:

☐ Community ☑ Activity ☐ Propagation

☐ Site Boundary ☑ Single Equipment ☐ Movies

Soil/Terrain Conditions: Flat; Loose, wet soil.

Machinery Description:

2 Cat D9G Dozer with straight stacks
1 Cat D6 Dozer with muffler
1 Cat 631B Scraper (single engine) with straight stack
1 Cat 637 Single Engine Scraper with muffler
1 Cat 637 Twin Engine Scraper with muffler

Miscellaneous Information:

Diagrams 1-17D & F represent closed loop system where dirt is removed from borrow pit and transported to fill area along highway right-of-way.

DATA LOG SUMMARY

HIGHWAY: I-75

DATE: Jan 1980

SITE LOCATION: Earthwork Site II

Sample	Location	Date	Time	Dur.	Site Diag.	Comments	Reduced
47-25	EW-9	1-17			1-17D	Fill area	
-26	EW-10	1-17			1-17E	Scraper passbys	
-30	EW-11	1-17			1-17F	Borrow pit; w/movies	
-29	EW-11	1-17				Cat 637 Single Engine Scraper IMI	

IMI
SINGLE EQUIPMENT/PROPAGATION NOISE MEASUREMENTS

HIGHWAY: I-75

DATE: Jan 1980

SITE LOCATION: Earthwork Site II

Sample	Location	Date	Equipment	L_{max} @ ___ ft.	L_{max} @ 50 ft.	L_{max} @ ___ ft.
47-29	EW-11	1-17	Cat 637 Scraper IMI		82	

ACTIVITY NOISE MEASUREMENTS

HIGHWAY: I-75

DATE: Jan. 1980

SITE LOCATION: Earthwork Site II

Sample	Location	Date	Dur.	L_{eq}	L_{99}	L_{90}	L_{50}	L_{10}	L_{1}
47-25	EW-9	1-17	:19	74.7	57	59	66	77	87
-26	EW-10	↓							
-30	EW-11	↓	:12	84	66	70	78	87	96

SINGLE EVENT LEVELS

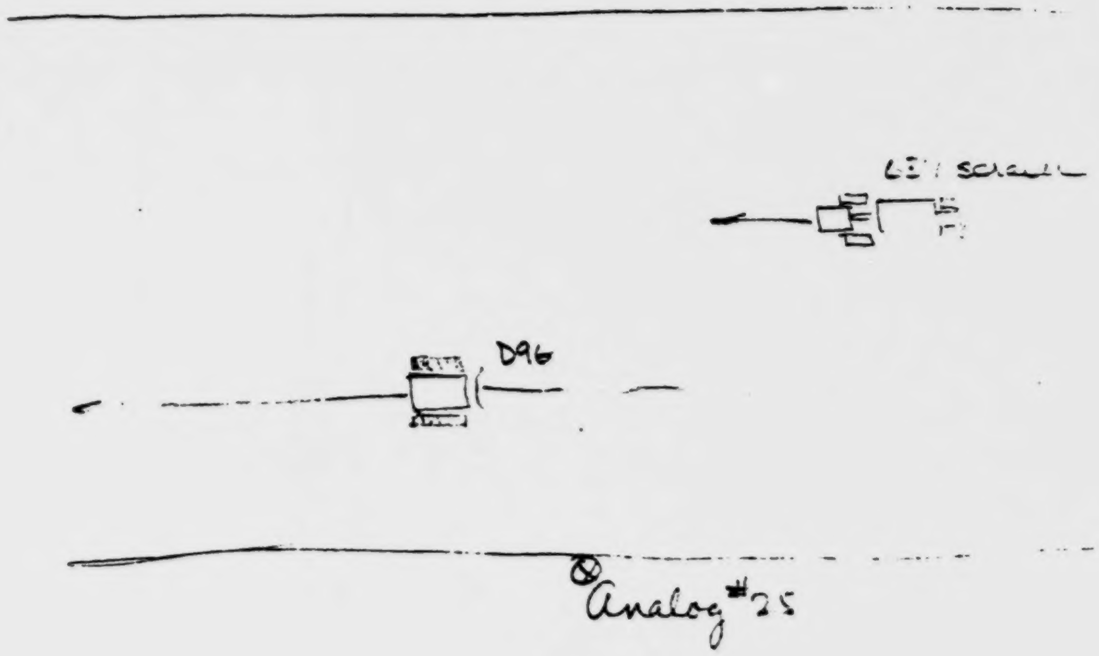
SINGLE EQUIPMENT/PROPAGATION NOISE MEASUREMENTS

HIGHWAY: I – 75 **DATE:** Jan 1980

SITE LOCATION: Earthwork Site II

Sample	Location	Date	Equipment	L_{max} @ ___ ft.	L_{max} @ 75 ft.	L_{max} @ ___ ft.
47-26	EW-10	1-17	Cat 631B		92	
-25			Cat 637 (NO REAR ENGINE) Empty	86 @ 50'		
			" " Loaded	77 @ 50'		
			" " Empty	80 @ 50'		
			Cat 631B Loaded	83 @ 68'		
			Cat 637 NRE. Loaded	75 @ 66'		
			Cat 631B Empty	93 @ 58'		
			Cat 637 N.R.E Empty	82 @ 60'		
			Cat 637 Loaded	78 @ 55'		

DIAGRAM 1-17D
Fill Operation
(Jasper Const.)


631 scraper
D9G
Analog #25

1 Cat 631B with straight stack
1 Cat D9G Dozer with straight stack
1 Cat 637 single engine scraper
1 Cat 637 twin engine scraper

DIAGRAM 1-17E

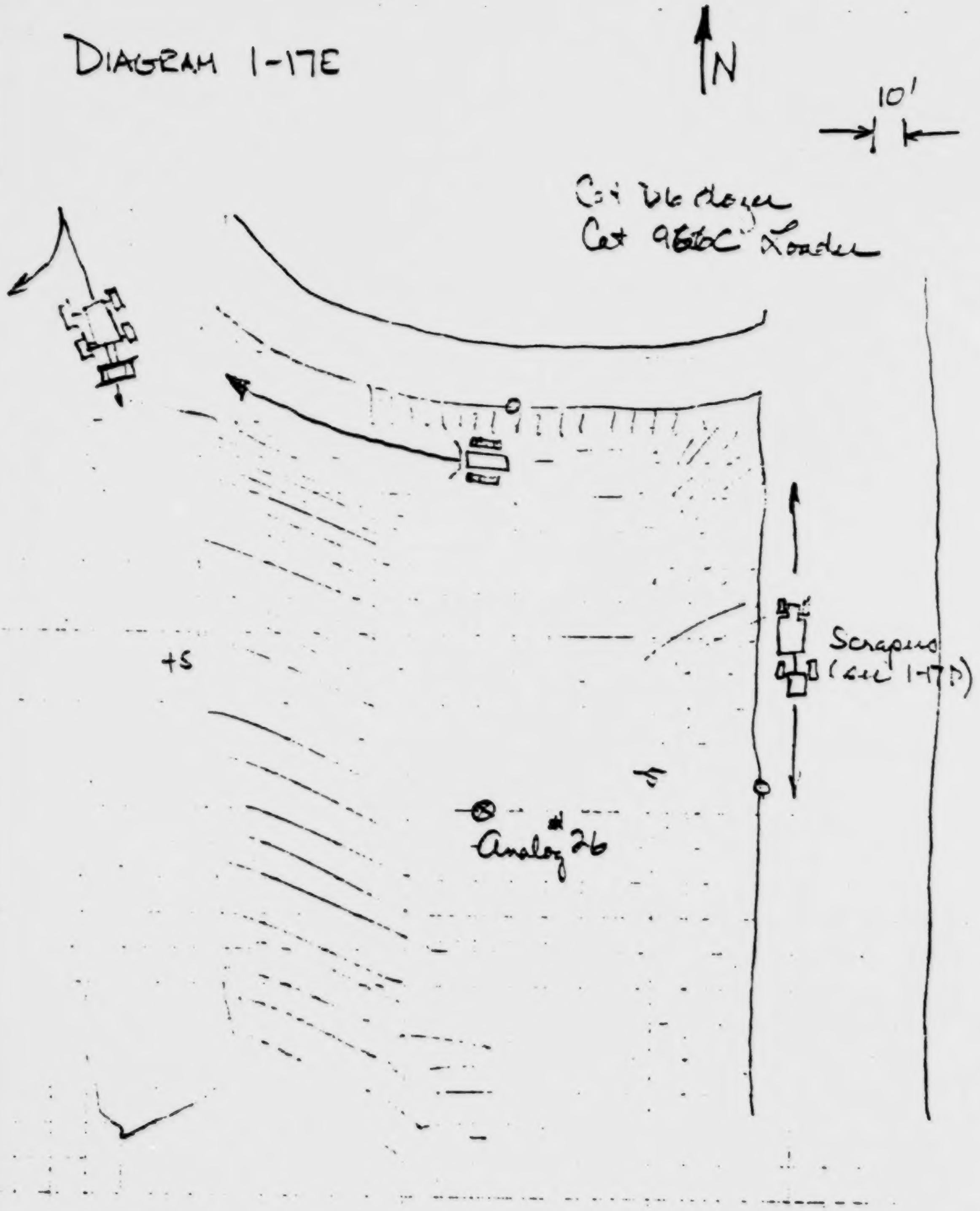
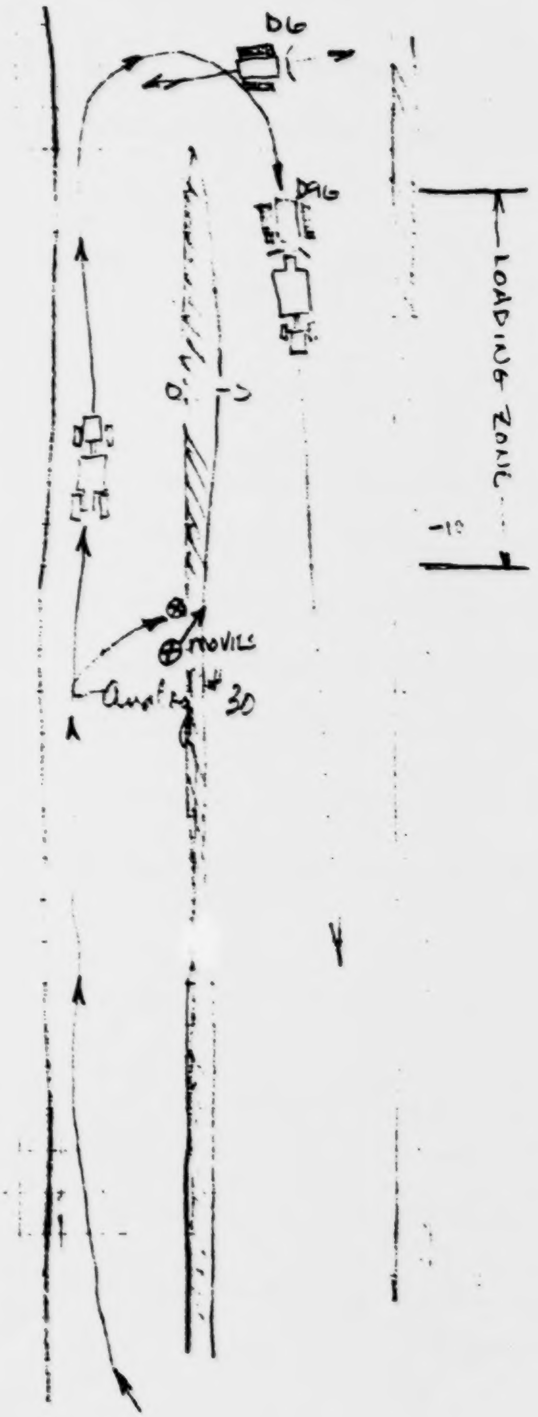

N
10'
Cat D6 dozer
Cat 966C Loader
Scrapers (see 1-17D)
+5
Analog #26

DIAGRAM 1-17F
Borrow Excavation


20
D6
D6
LOADING ZONE
—10
MOVIES
Angle #30

1 Cat [illegible]
1 Cat [illegible]
1 Cat [illegible]
Sta [illegible]
1 Cat D[illegible]

NOTE: 17D [illegible]
[illegible]

Scraper [illegible]
:50
:55
1:10

Round Trip Time: [illegible]

Measurement Site Data

Highway: I-275 Date: Jan 1980

Site Location: Earthwork Site III - Bridge Approach Ramp; St. Petersburg area

Type of Measurements:

☐ Community ☐ Activity ☐ Propagation

☑ Site Boundary ☑ Single Equipment ☑ Movies

Soil/Terrain Conditions: Houses and trees line both sides of right-of-way. Work flat, compacted dirt with dump truck loads of earth situated at various points. Height of work increases as you look north (from top to bottom of Diagram 1-18C).

Machinery Description:
1 Cat D7G Dozer with screen engine covers and muffler
1 Cat D7 Dozer with muffler
1 Cat 12F Grader with muffler
1 Cat 14E Grader with straight stack
1 Cat 613 Water truck
Mack & Ford Single Chassis Dump Trucks
1 Dynapac Vibratory Roller
1 Dynapac Vibratory Roller

Miscellaneous Information:
1 1/2 rolls of movies were taken at very slow frame rate in order to provide truck count.

35

DATA LOG SUMMARY

HIGHWAY: I - 275

DATE: Jan. 1980

SITE LOCATION: Earthwork Site III

Sample	Location	Date	Time	Dur.	Site Diag.	Comments	Reduced
47 -36	EW-12	1-18			1-18C	Fill area; east edge of work area	
38	EW-13	↓			↓	" " " " "	
37	EW-13	↓			↓	D7G Dozer IMI's	
40	EW-14	↓			↓	Fill area: west edge of work area	
39	EW-15	↓			↓	N/G	
41	EW-16	↓			↓	Fill area; western site boundary	
42	EW-17	↓			↓	Well point pump @ 25'	
43	—	↓			↓	Cat 613 Water truck IMI's	
178 -2	EW-18	↓	1253	3:00	↓	Site boundary; long-term sample	

ACTIVITY NOISE MEASUREMENTS

HIGHWAY: I-75

DATE: Jan. 1980

SITE LOCATION: Earthwork Site III

Sample	Location	Date	Dur.	L_{eq}	L_{99}	L_{90}	L_{50}	L_{10}	L_1
47-36	EW-12	1-18	:08	72.6	65	68	72	76	79
-38	EW-13		:08	73.7	64	68	72	77	80
-39	-			N/G					
-40	EW-14		:12	71.0	64	67	70	74	76
-41	EW-16		:10	66.3	63	64	66	68	70
-42	EW-17		:02	83.2	82	83	83	84	84

SITE BOUNDARY/COMMUNITY NOISE MEASUREMENTS

HIGHWAY: I-275 DATE: Jan 1980

SITE LOCATION: Earthwork Site III

Sample	Location	Date	Dur.	L_{eq}
178-2	EW-18	1-18	4:00	70.6

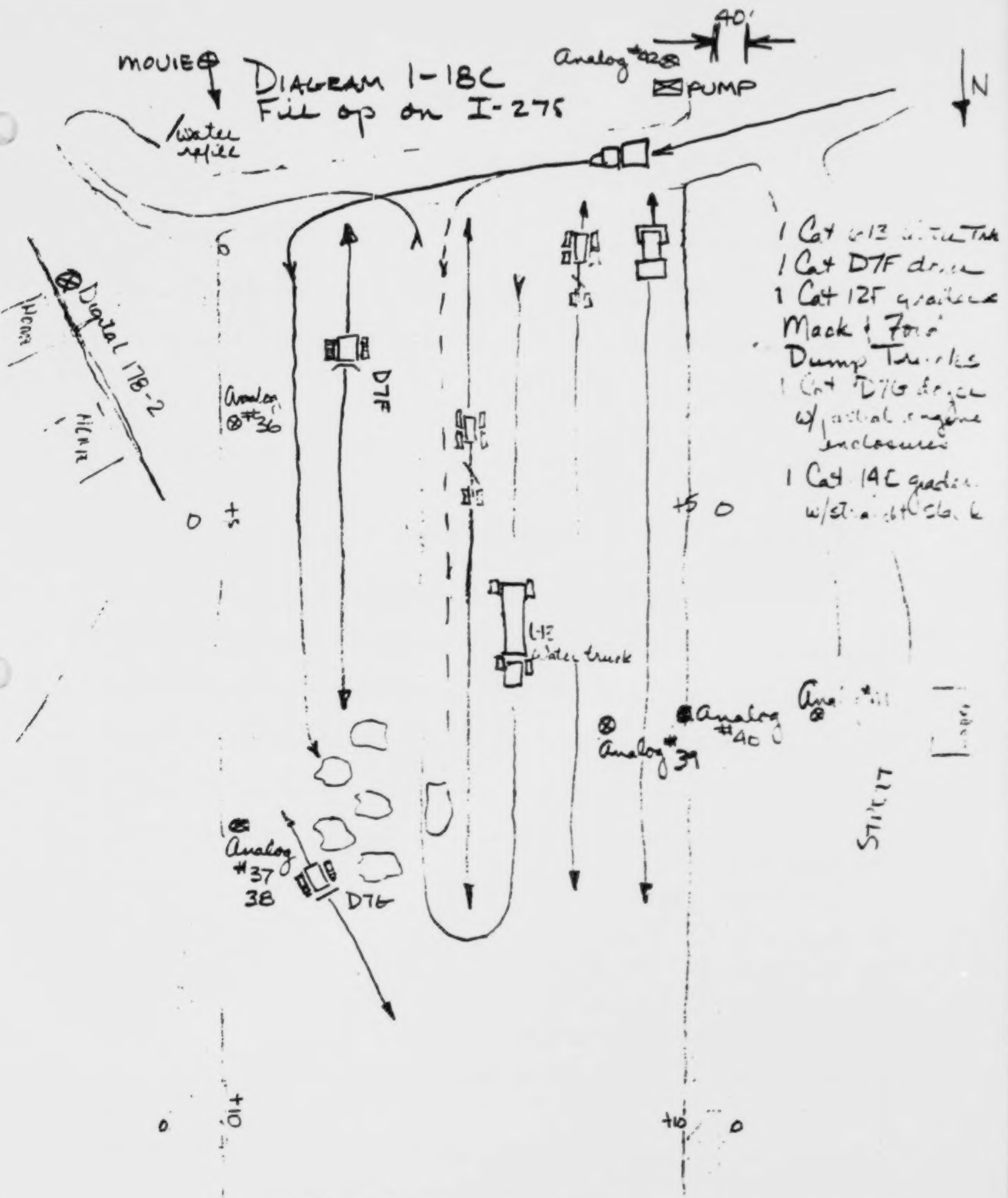
SINGLE EQUIPMENT/PROPAGATION NOISE MEASUREMENTS

HIGHWAY: I-75 DATE: Jan 1980

SITE LOCATION: Earthwork Site III

7 Sample/	Location	Date	Equipment	L_{max} @ ___ ft.	L_{max} @ 50 ft.	L_{max} @ ___ ft.
47-38	EW-13	1-18	Cat D7G Dozer		78	

DIAGRAM 1-18C
Fill op on I-275


MOVIE
Analog #42
40'
PUMP
N
Water refill
Digital 17B-2
Analog #36
D7F
613 Water truck
Analog #39
Analog #40
Analog #41
Analog #37
38
D7G
STREET
0
+5
+5
0
+10
0
+10
0

1 Cat 613 water Tank
1 Cat D7F dozer
1 Cat 12F grader
Mack & Ford Dump Trucks
1 Cat D7G dozer w/ partial engine enclosures
1 Cat 14C grader w/straight blade

NOTE: Analog #'s off by one compared to tape

NOTE: TOTAL CLOCKED ELAPSED
TIME OF MOVIE = 1st ROLL [illegible] 35
2nd roll = ~34 minutes

5/10

Measurement Site Data

Highway: I-75

Date: Jan 1980

Site Location: Earthwork Site IV - Bridge Approach Ramp @ St. Rd. 64; Borrow Pit

Type of Measurements:

☐ Community ☑ Activity ☐ Propagation

☑ Site Boundary ☐ Single Equipment ☑ Movies

Soil/Terrain Conditions: Flat open terrain; Fill area is elevated, with height increasing from south to north. Borrow pit work area is about 10 feet below original ground level.

Machinery Description:

1 Cat D6D Dozer with muffler (fill area)
2 Cat 631 C Scrapers
2 Cat 631 D Scrapers
2 Cat 627 B Twin Engine Scrapers
1 Cat D9H Dozer with muffler } (borrow pit)
1 Cat D8H Dozer with muffler } (borrow pit)

Miscellaneous Information: See attached page

DESCRIPTION OF ACTIVITIES

As shown in the attached Summary Diagram, dirt was excavated from borrow pit by scrapers, which hauled the dirt approximately one mile north up the right-of-way to the bridge approach ramp fill area. Measurements were taken on two separate days such that some of the operations had changed somewhat. Following is an interpretation of these operations:

a. Borrow pit activities (Diagram 1-24A) remained the same for both measurement periods.

b. At the approach ramp fill area, measurements made on 1/21 were in Area #1 as shown on Summary Diagram, while measurements made on 1/24 were in Area #2.

c. Regarding the activity on 1/21, only the 631C and 631D scrapers were evident at this fill area (a total of four scrapers). The two 627B scrapers were entering/leaving the borrow pit, but were dumping at another site.

d. Regarding the activity on 1/24, all six scrapers were dumping at the approach ramp fill area. Note that long-term 178-1 shown on Diagram 1-24B was started on 1/24 and stopped on 1/25. The activities depicted in that diagram relate to the configuration apparent on 1/24. On 1/25, the fill operation had moved 600 feet north of the microphone position and closer to the east boundary. Therefore, data taken on 1/25 will not be included in the L_{eq} value for the site.

~~was dumping at the fill area.~~

~~[illegible]~~

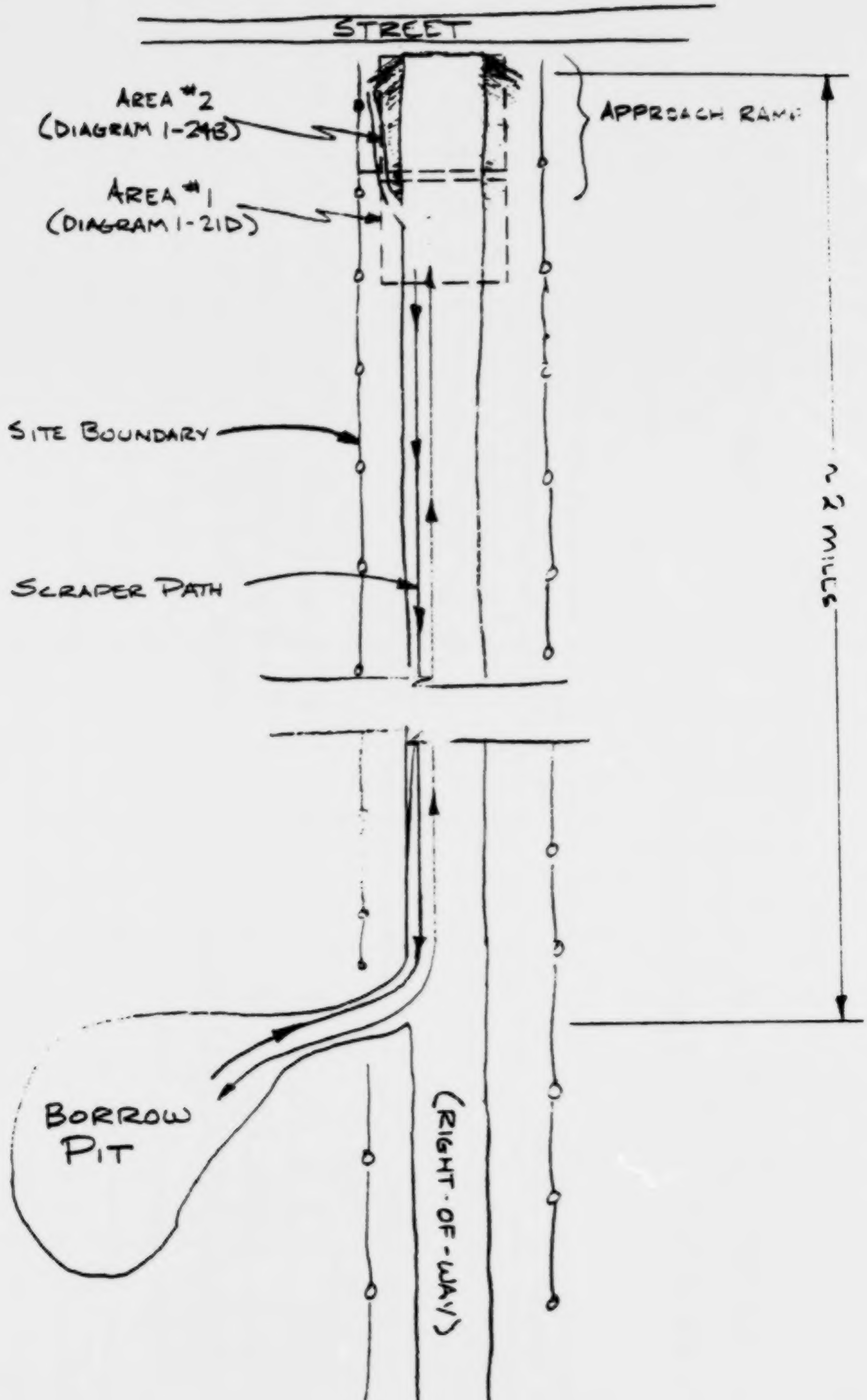
SCRAPER TRIP TIME ANALYSIS

Summary trip times as measured at Borrow Pit shown in Diagram 1-24A:

	Time in Borrow Pit	Time on Haul Road	Total Round Trip Time
631 D Scraper*			
Sample 1	2:45	9:45	12:30
2	3:45	11:30	15:15
3	3:45	13:20	17:05
4	2:15	11:05	14:20
5	4:20	9:45	14:05
627B Scraper*			
Sample 1	2:10	11:50	14:00
2	2:15	10:15	12:30
3	2:40	10:30	13:10
4	3:05	11:00	14:05

*All scrapers were travelling same distance during these analyses.

SUMMARY DIAGRAM
(NOT TO SCALE)


STREET
AREA #2
(DIAGRAM 1-24B)
APPROACH RAMP
AREA #1
(DIAGRAM 1-21D)
SITE BOUNDARY
SCRAPER PATH
~2 MILES
BORROW PIT
(RIGHT-OF-WAY)

DATA LOG SUMMARY

HIGHWAY: I-75

DATE: Jan. 1980

SITE LOCATION: Earthwork Site IV

Sample	Location	Date	Time	Dur.	Site Diag.	Comments	Reduced
47-50	EW-19	1-21			1-21D	Fill operation; Area #1 (see Summary)	
51	EW-19	1-21			1-21D	Cat D7F Dozer IMI's @ 50'	
52	EW-20	1-21			1-21D	Fill operation; @ site boundary	
53	EW-21	1-21			1-21E	Scraper passbys	
178-4	EW-22	1-24			1-2AB	Fill operation; Area #2 (see Summary)	
178-5	EW-23	1-24			1-24A	Borrow Pit; Site Boundary	
158-2	EW-24	1-24			1-24A	Borrow Pit; Site Boundary	

4/5

SITE BOUNDARY/COMMUNITY NOISE MEASUREMENTS

HIGHWAY: I - 75 DATE: Jan. 1980

SITE LOCATION: Earthwork Site IV

Sample	Location	Date	Dur.	L_{eq}
178-4	EW-22	1-24	6:00	64.6
178-5	EW-23	↓	3:00	70.9
158-2	EW-24		12:00	67.2

ACTIVITY NOISE MEASUREMENTS

HIGHWAY: I - 75

DATE: Jan. 1980

SITE LOCATION: Earthwork Site IV

Sample	Location	Date	Dur.	L_{eq}	L_{99}	L_{90}	L_{50}	L_{10}	L_1
47-50	EW-19	1-21	:14	77.0	64	66	74	81	86
-52	EW-20	↓	:10	69.8	62	64	68	73	78
-53	EW-21		:10	69.1	57	58	58	70	82

SINGLE EQUIPMENT/PROPAGATION NOISE MEASUREMENTS

HIGHWAY: I-75 DATE: Jan. 1980

SITE LOCATION: Earthwork Site IV

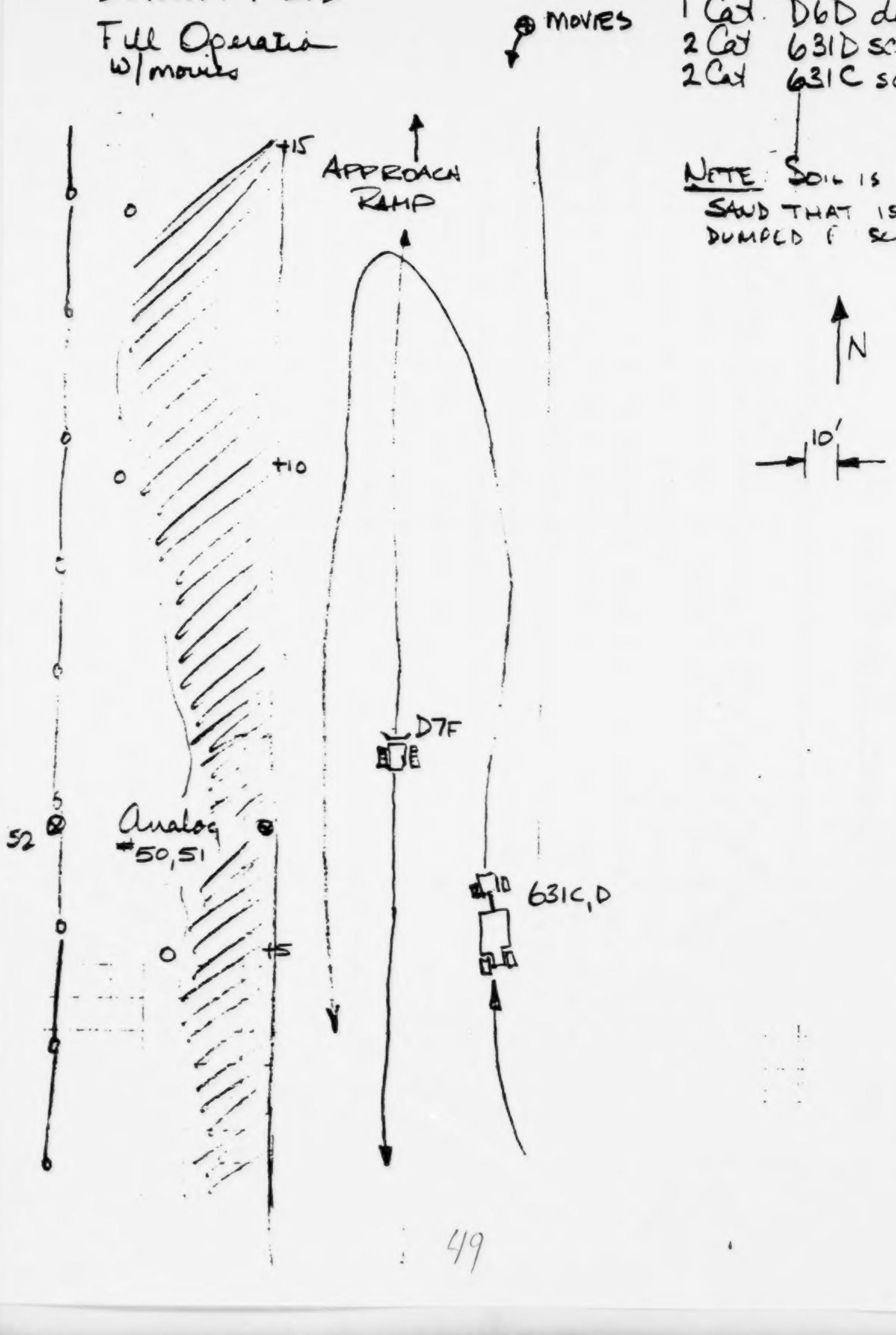
Sample	Location	Date	Equipment	L_{max} @ ___ ft.	L_{max} @ 50 ft.	L_{max} @ ___ ft.
47-51	EW-19	1-21	Cat D7F Dozer		78	

DIAGRAM 1-21D

Full Operation
w/movies

1 Cat. D6D dozer
2 Cat 631D scrapers
2 Cat 631C scrapers

__NOTE__: SOIL IS LOOSE, DRY SAND THAT IS EASILY DUMPED BY SCRAPERS

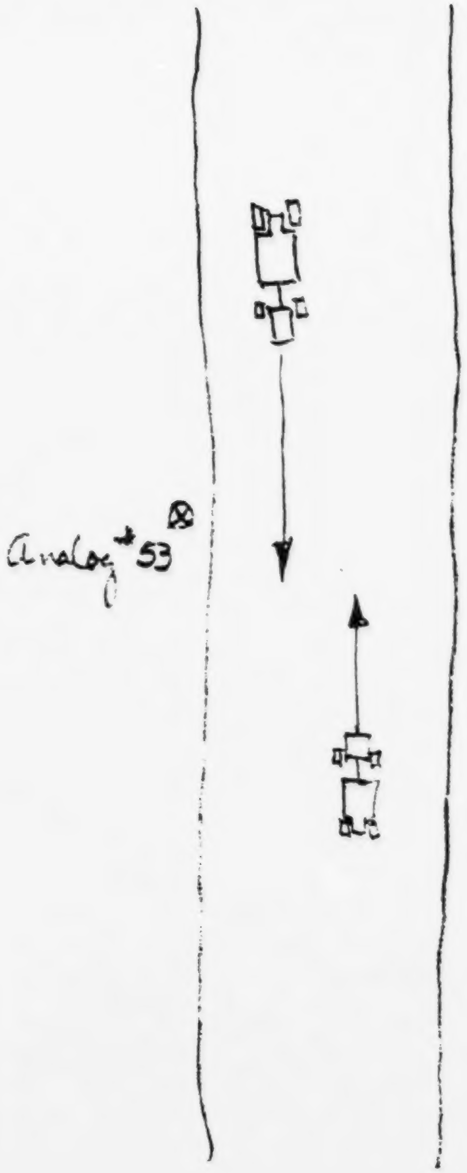


MOVIES
APPROACH RAMP
+15
+10
+5
0
0
0
D7F
631C,D
Analog #50,51
52
N
10'

Diagram 1-21E
High-Speed Scraper Passbys
(Same scrapers as in 1-21D)

10'

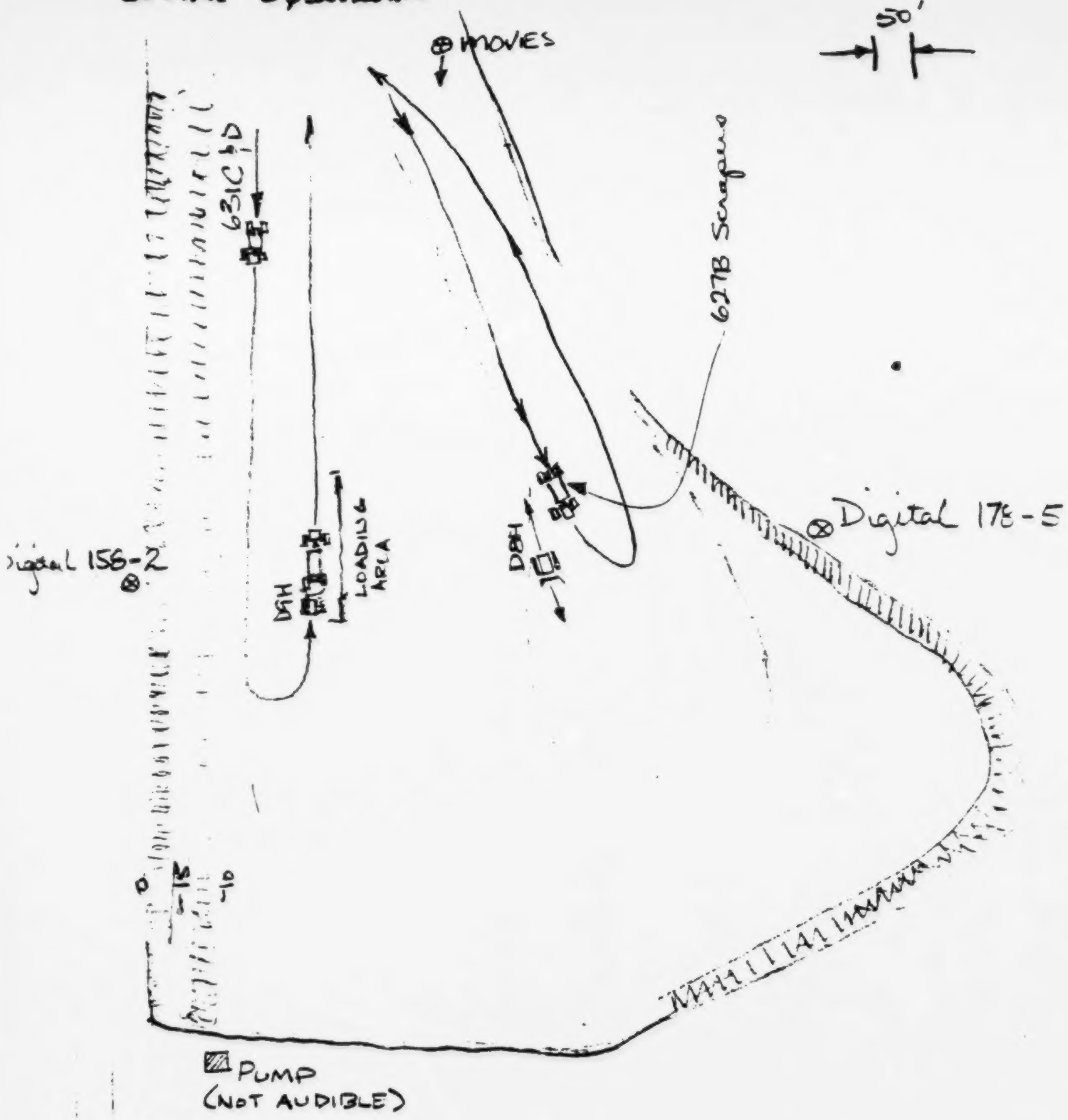
2 Cat 631 C
2 Cat 631 D



* Distance from mic. to scraper varies for each pass; see tape annotation

*6 passbys in 22 min.

DIAGRAM 1-24A
Borrow Excavation


MOVIES
50'
631C's D
627B Scrapers
LOADING AREA
D8H
D8H
Digital 178-5
Digital 156-2
PUMP
(NOT AUDIBLE)

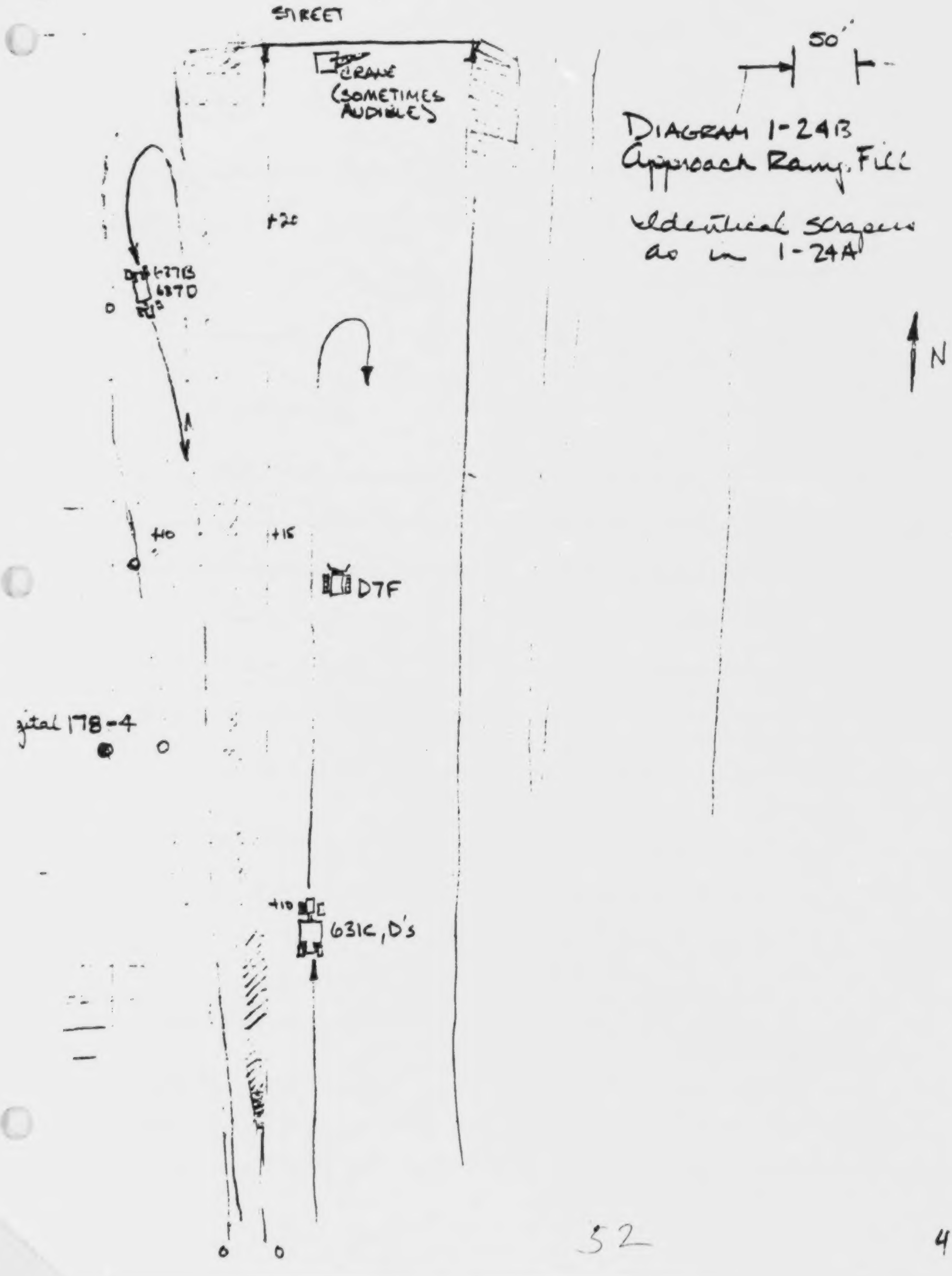

STREET
CRANE
(SOMETIMES AUDIBLE)
50'
+20
1-27B
637D
+10
+15
D7F
gital 178-4
+10
631C, D's
N

DIAGRAM 1-24B
Approach Ramp, Fill

Identical scrapers as in 1-24A

Measurement Site Data

Highway: I-75

Date: Jan 1980

Site Location: Earthwork Site V - Removal of Stockpiled Debris

Type of Measurements:

☐ Community ☑ Activity ☐ Propagation

☐ Site Boundary ☑ Single Equipment ☑ Movies

Soil/Terrain Conditions: Flat, open area at stockpile loading site. Wooded area with heavy groundcover at unloading site.

Machinery Description:

1 Cat 966C Front End Loader with straight stack
1 Cat 950 Front End Loader with muffler
2 Cat 631B Scrapers with straight stacks
1 Cat D7F Dozer w/ Straight Stack

Miscellaneous Information:

Diagrams 1-15G, H and J are closed loop system involving loading, transporting and unloading/spreading of stockpiled debris.

DATA LOG SUMMARY

HIGHWAY: I-75

DATE: Jan 1980

SITE LOCATION: Earthwork Site V

Sample	Location	Date	Time	Dur.	Site Diag.	Comments	Reduced
47 - 6	EW -25	1-15			1-15G	Cat. 966C IMI @ 50'	
7	EW-25	↓			1-15G	Loading operation; w/movies	
8	EW-26				1-15G	Cat. 950 IMI @ 50'	
9	EW-27				1-15H	Cat. 631B IMI @ 50'	
12	EW-27				1-15H	Cat 631B Passbys	
13	EW-28				1-15J	Scraper unloading area	
13A	EW-28				1-15J	D7F Dozer IMI's	

ACTIVITY NOISE MEASUREMENTS

HIGHWAY: I - 75

DATE: Jan. 1980

SITE LOCATION: Earthwork Site V

Sample	Location	Date	Dur.	L_{eq}	L_{99}	L_{90}	L_{50}	L_{10}	L_{1}
47-7	EW-25	1-15	:04	85.5	72	75	84	88	95
		↓							
-13	EW-28		:07	80.3	65	72	79	84	86

IMI

SINGLE EQUIPMENT/PROPAGATION NOISE MEASUREMENTS

HIGHWAY: I-75

DATE: Jan 1980

SITE LOCATION: Earthwork Site V

Sample	Location	Date	Equipment	L_{max} @ ___ ft.	L_{max} @ 50 ft.	L_{max} @ ___ ft.
47-6	EW-25	1-15	Cat 966C Loader		88	
-8	EW-26	↓	Cat 950 Loader		79	
-9	EW-27		Cat 631B Scraper (no muffler)		96	
-13	EW-28		Cat D7F Dozer		79	

SINGLE EVENT LEVELS

SINGLE EQUIPMENT/PROPAGATION NOISE MEASUREMENTS

HIGHWAY: I-75 DATE: Jan 1980

SITE LOCATION: Earthwork Site V

Sample	Location	Date	Equipment	L_{max} @ ___ ft.	L_{max} @ 50 ft.	L_{max} @ ___ ft.
47-12	EW-27	1-15	Cat 613B Scraper		80	
			" " "		82	

DIAGRAM 1-15H
SCRAPER IMI'S & PASSBYS

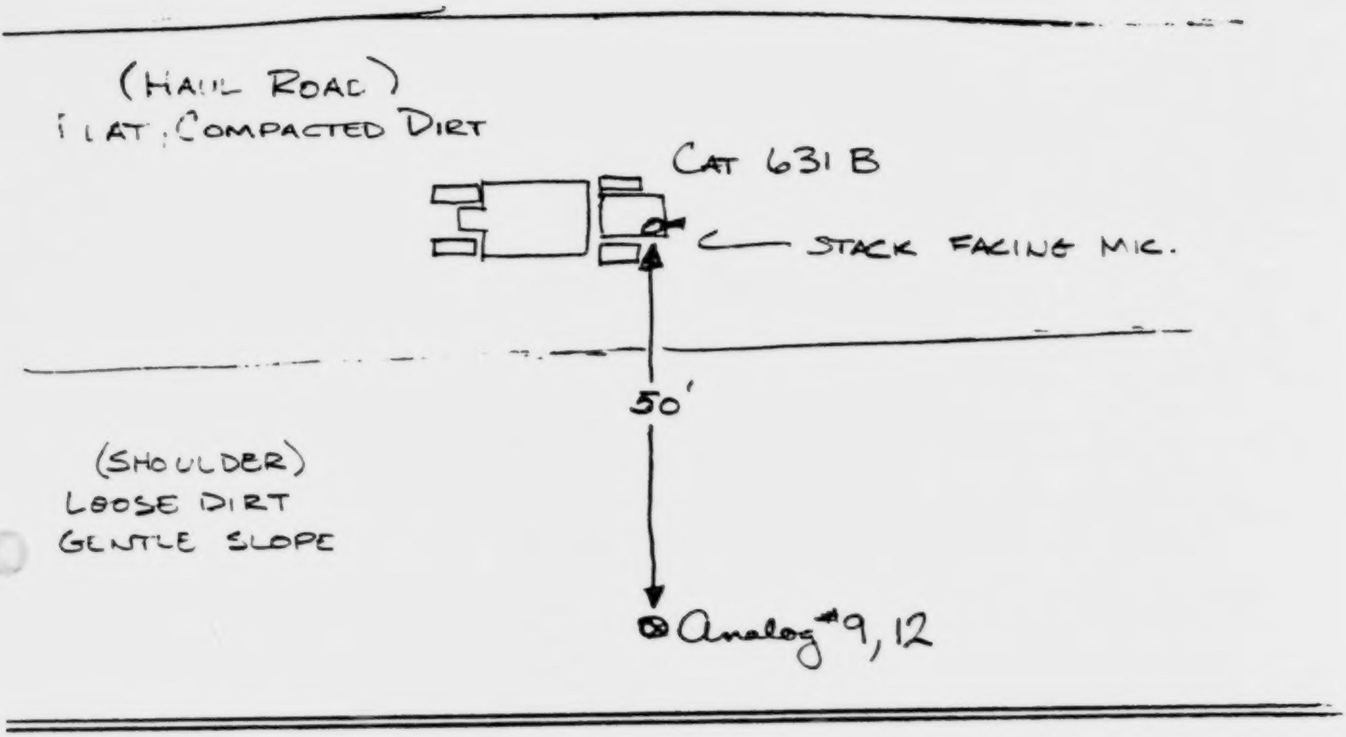
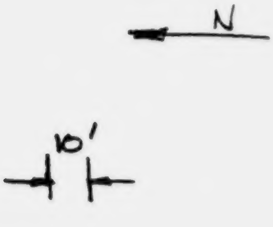
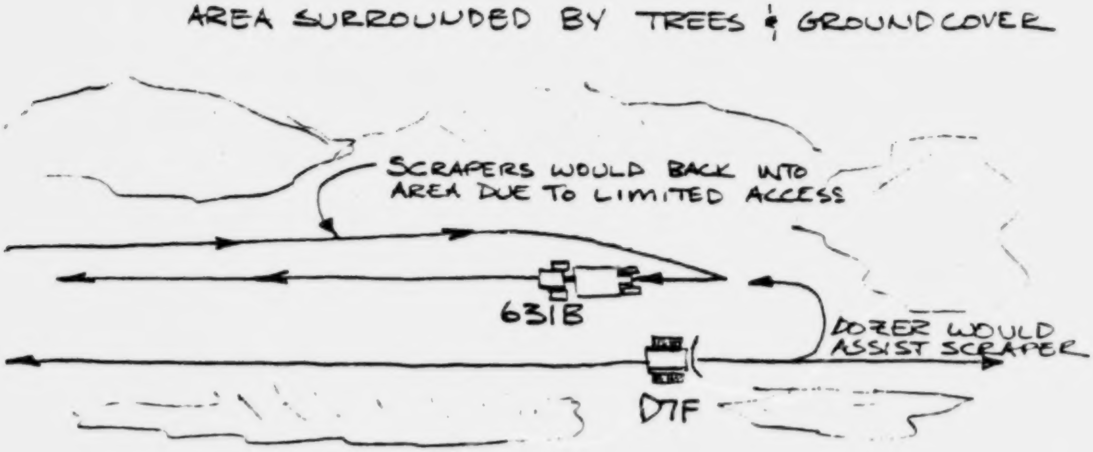

(HAUL ROAD)
FLAT; COMPACTED DIRT
CAT 631 B
STACK FACING MIC.
50'
(SHOULDER)
LOOSE DIRT
GENTLE SLOPE
Analog #9, 12

DIAGRAM 1-15J
SCRAPERS DUMPING
DEBRIS IN WOODED AREA




AREA SURROUNDED BY TREES & GROUNDCOVER
SCRAPERS WOULD BACK INTO AREA DUE TO LIMITED ACCESS
631B
DOZER WOULD ASSIST SCRAPER
D7F

®Analog #13
(IMI INCLUDED
IN THIS SAMPLE)

Cat. D7F Dozer w/straight stock
Cat 631B Scrapers

Measurement Site Data

Highway: I-75

Date: Jan. 1980

Site Location: Earthwork VI - Approach Ramp Embankment Shaping

Type of Measurements:

☐ Community
☐ Site Boundary
☑ Activity
☑ Single Equipment
☐ Propagation
☐ Movies

Soil/Terrain Conditions: Steep embankment; loosely compacted soil in work area

Machinery Description:
1 Cat. D6D Dozer with muffler

Miscellaneous Information:

DATA LOG SUMMARY

HIGHWAY: I-75

DATE: Jan. 1980

SITE LOCATION: Earthwork Site VI

Sample	Location	Date	Time	Dur.	Site Diag.	Comments	Reduced
47-48	EW-29	1-21			1-21C	Embankment shaping	
-49	EW-29	1-21			1-21C	Cat D6D Dozer IMI@50'	

ACTIVITY NOISE MEASUREMENTS

HIGHWAY: I - 75

DATE: Jan 1980

SITE LOCATION: Earthwork Site VI

Sample	Location	Date	Dur.	L_{eq}	L_{99}	L_{90}	L_{50}	L_{10}	L_{1}
47-48	EW-29	1-21	:13	71.3	62	65	70	75	76

SINGLE EQUIPMENT/PROPAGATION NOISE MEASUREMENTS

HIGHWAY: I-75

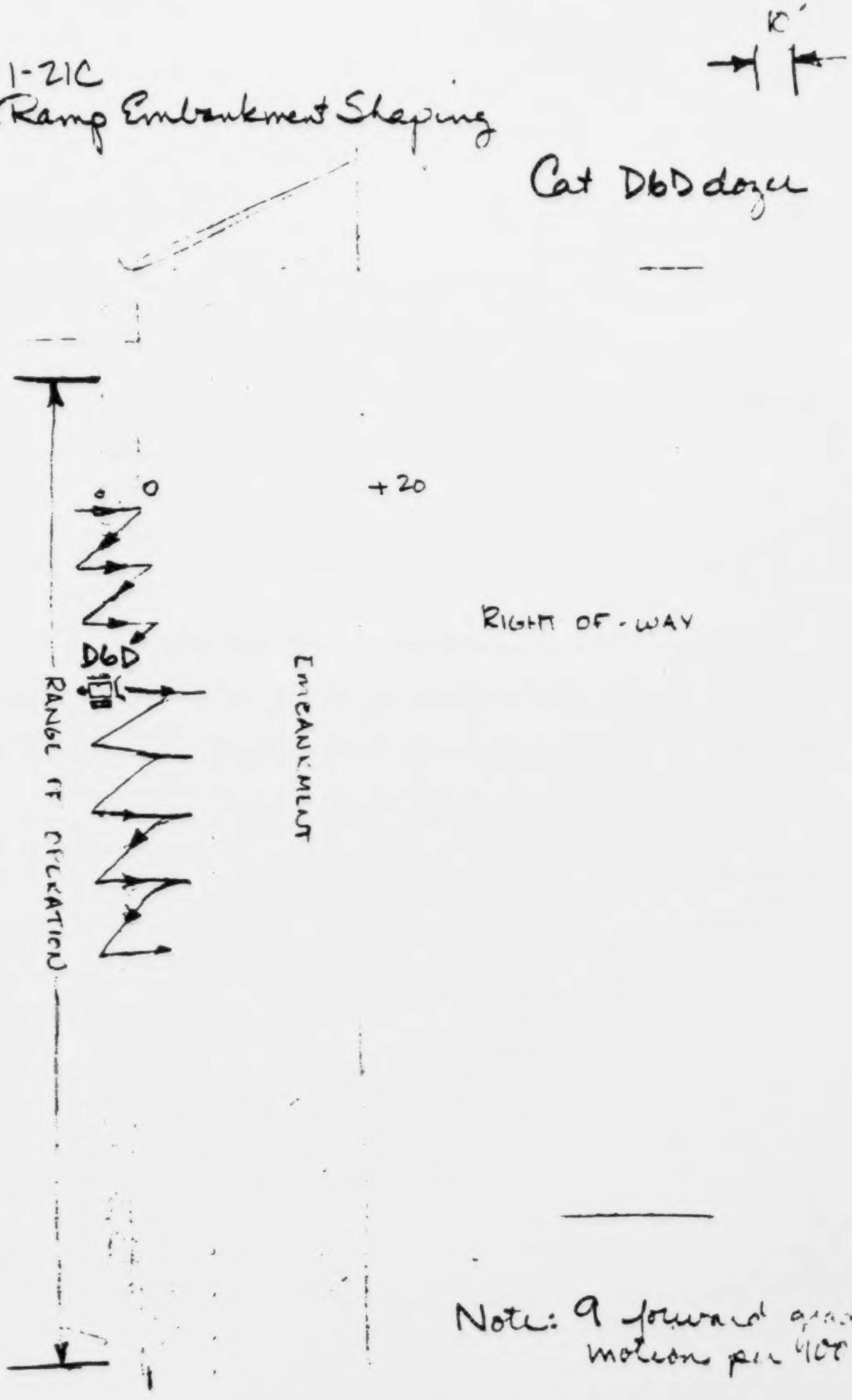
DATE: Jan 1980

SITE LOCATION: Earthwork Site VI

Sample	Location	Date	Equipment	L_{max} @ ___ ft.	L_{max} @ 50 ft.	L_{max} @ ___ ft.
47-49	EW-29	1-21	Cat D6D Dozer		80	

DIAGRAM 1-21C
Approach Ramp Embankment Shaping

Cat D6D dozer


10'
0
+20
D6D
RANGE OF OPERATION
EMBANKMENT
RIGHT-OF-WAY

Analog #48,49

Note: 9 forward grading motion per 400-feet

Measurement Site Data

Highway: I-75 Date: Jan 1980

Site Location: Earthwork Site VII - Finishing Grading Along Roadway Shoulder

Type of Measurements:

☐ Community ☑ Activity ☐ Propagation

☐ Site Boundary ☐ Single Equipment ☐ Movies

Soil/Terrain Conditions: Microphone located on dirt embankment. Grading was occurring in loose dirt shoulder next to concrete roadbed.

Machinery Description:

1 Cat 12F Grader w/muffler
1 Cat 950 Loader
1 Cat 12G Grader w/ muffler and partial engine enclosure.

Miscellaneous Information:

DATA LOG SUMMARY

HIGHWAY: I - 75

DATE: Jan 1980

SITE LOCATION: Earthwork Site VII

Sample	Location	Date	Time	Dur.	Site Diag.	Comments	Reduced
47 - 5	EW - 30	1 - 15			1-15F	Finish Grading	

ACTIVITY NOISE MEASUREMENTS

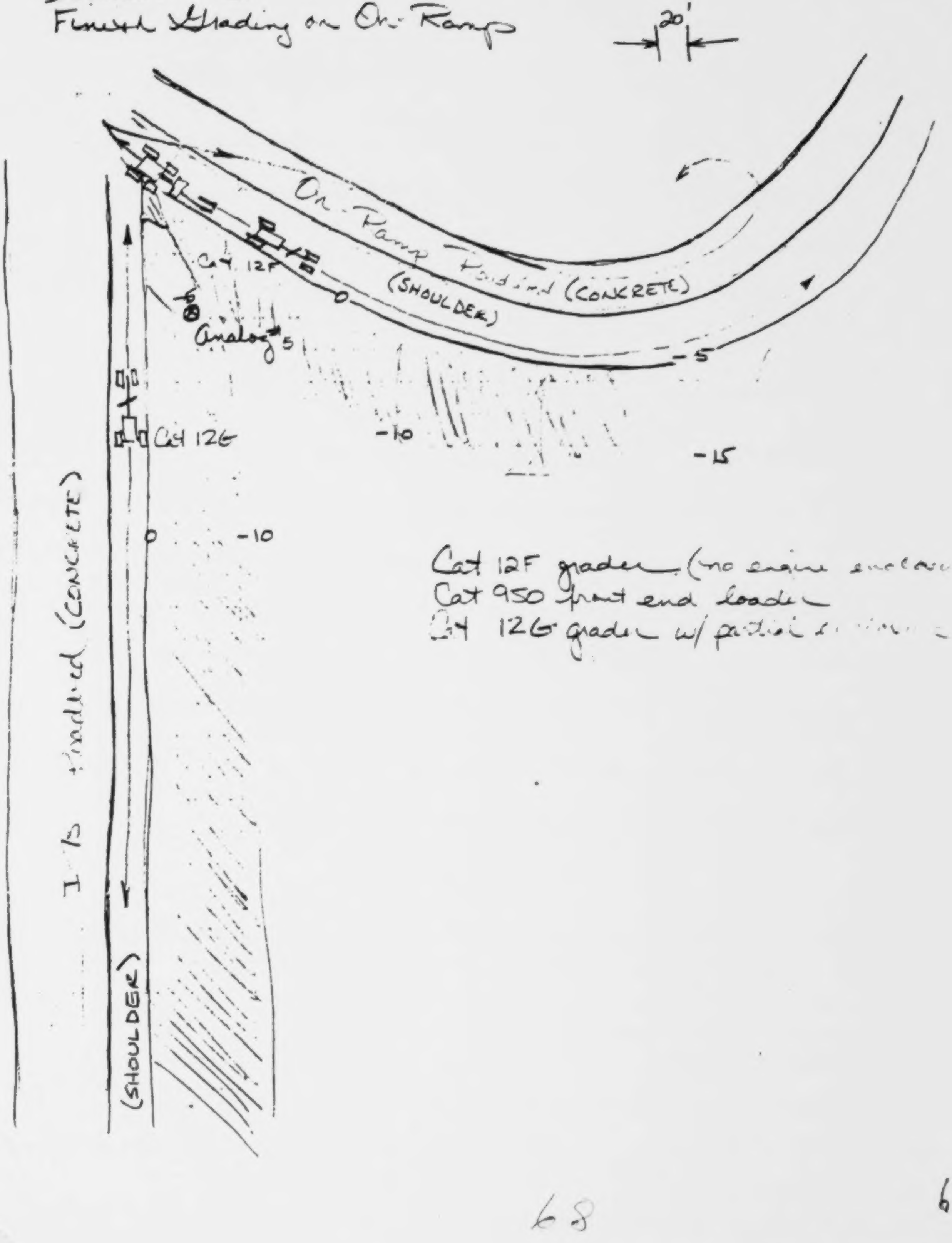
HIGHWAY: I-75

DATE: Jan. 1980

SITE LOCATION: Earthwork Site VII

Sample	Location	Date	Dur.	L_{eq}	L_{99}	L_{90}	L_{50}	L_{10}	L_1
47-5	EW-30	1-15	:10	77.6	61	68	77	81	83

DIAGRAM 1-15F
Finish Grading on On-Ramp


20'
On-Ramp Paved (CONCRETE)
(SHOULDER)
Cat 12F
Analog #5
0
-5
-10
-15
Cat 12G
0
-10
I 15 Paved (CONCRETE)
(SHOULDER)

Cat 12F grader (no engine enclosure)
Cat 950 front end loader
Cat 12G grader w/ partial enclosure

Measurement Site Data

Highway: I-75 Date: Jan 1980

Site Location: Earthwork Site VIII - Finish Grading of Roadway Subbase

Type of Measurements:

☐ Community ☑ Activity ☐ Propagation

☐ Site Boundary ☐ Single Equipment ☐ Movies

Soil/Terrain Conditions: Flat, compacted dirt

Machinery Description:

1 Autograde 65B Grader
1 Cat 613B Scraper with Elevator

Note: Grader operated almost continuously at a high, constant RPM.

Miscellaneous Information:

Grader worked very slowly, fine grading the subbase. Scraper would also pass slowly, picking up the windrow of dirt left by the grader.

Scraper passbys west of microphone are not part of subbase

DATA LOG SUMMARY

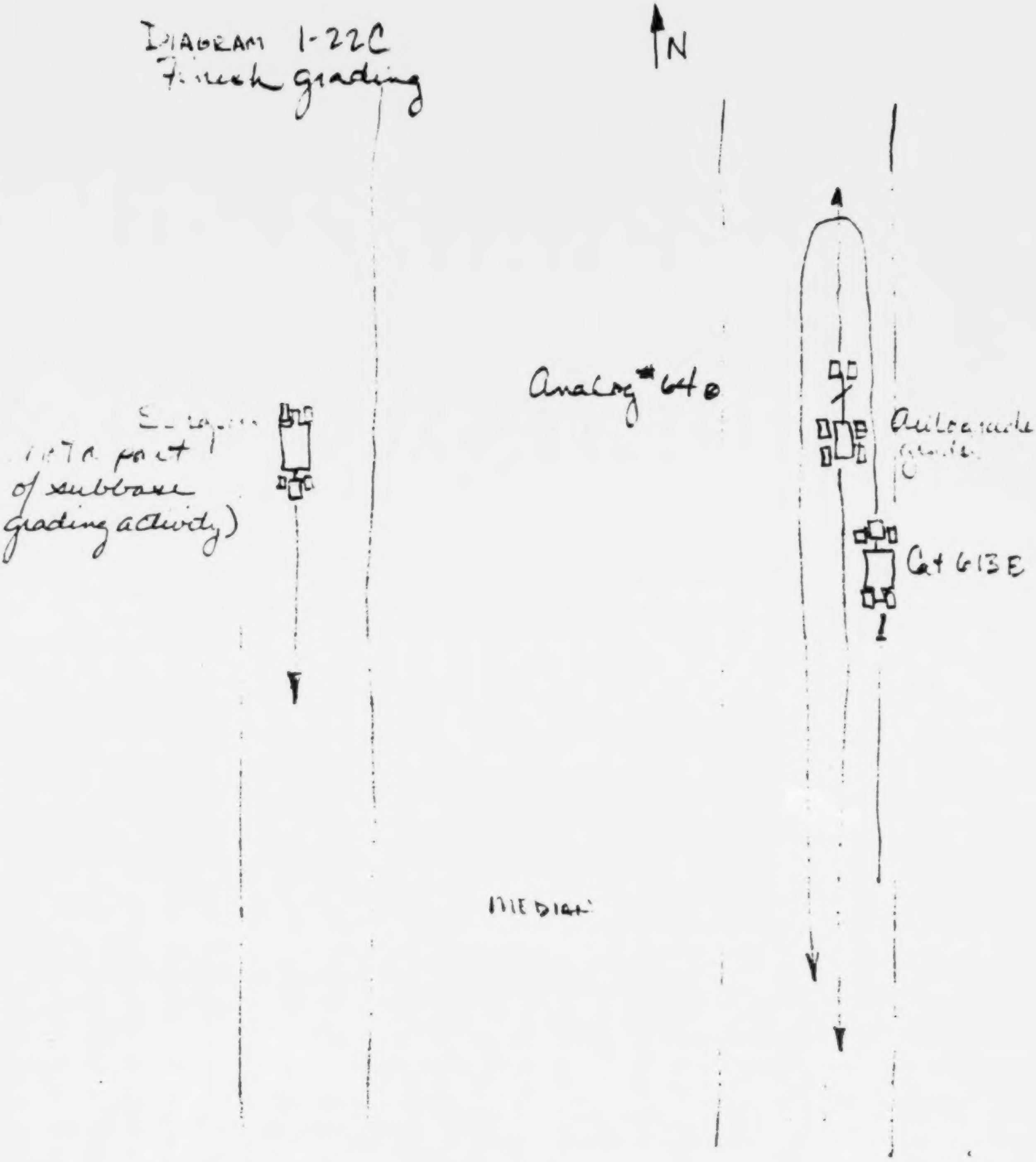
HIGHWAY: I-75

DATE: Jan 1980

SITE LOCATION: Earthwork Site VIII

Sample	Location	Date	Time	Dur.	Site Diag.	Comments	Reduced
47-64	EW-31	1-22			1-22C		

DIAGRAM 1-22C
Finish grading


N
Scraper
(not a part of subbase grading activity)
Analog #640
Autograde grader
Cat 613E
MEDIAN

ACTIVITY NOISE MEASUREMENTS

HIGHWAY: I-75

DATE: Jan 1980

SITE LOCATION: Earthwork Site VIII

Sample	Location	Date	Dur.	L_{eq}	L_{99}	L_{90}	L_{50}	L_{10}	L_1
64	EW-31		:07	77.7	58	60	69	83	86

Single Event Levels

SINGLE EQUIPMENT/PROPAGATION NOISE MEASUREMENTS

HIGHWAY: I-75

DATE: Jan 1980

SITE LOCATION: Earthwork Site VIII

Sample	Location	Date	Equipment	L_{max} @ ___ ft.	L_{max} @ 40 ft.	L_{max} @ ___ ft.
47-64			Autograde Grader		87	
					84	

Measurement Site Data

Highway: I-75

Date: Jan. 1980

Site Location: Earthwork Site IX - Borrow Excavation

Type of Measurements:

☐ Community ☑ Activity ☐ Propagation

☐ Site Boundary ☑ Single Equipment ☑ Movies

Soil/Terrain Conditions: Borrow Pit area cleared of trees, etc. Uneven terrain within Borrow Pit. Large drainage ditch between microphone and scraper loading area.

Machinery Description:

1 Cat D9G dozer with no muffler
1 Cat 631 B Scraper
1 Cat 631 C Scraper
2 Cat 631 D Scrapers

Miscellaneous Information:

Dozer was pushing scrapers during loading cycles.

DATA LOG SUMMARY

HIGHWAY: I-75

DATE: Jan 1980

SITE LOCATION: Earthwork Site IX

Sample	Location	Date	Time	Dur.	Site Diag.	Comments	Reduced
47-45	EW-32	1-21			1-21A	Scraper IMI's @ 50'	
-46	EW-33	1-21			1-21A	Loading Op. in Borrow Pit	
47-44	EW-39	1-21			1-21A	Scraper passby's ~50'	

ACTIVITY NOISE MEASUREMENTS

HIGHWAY: I - 75

DATE: Jan. 1980

SITE LOCATION: Earthwork Site IX

Sample	Location	Date	Dur.	L_{eq}	L_{99}	L_{90}	L_{50}	L_{10}	L_1
47-46	EW-33	1-21	:09	77.5	65	71	76	81	83

SINGLE EQUIPMENT/PROPAGATION NOISE MEASUREMENTS

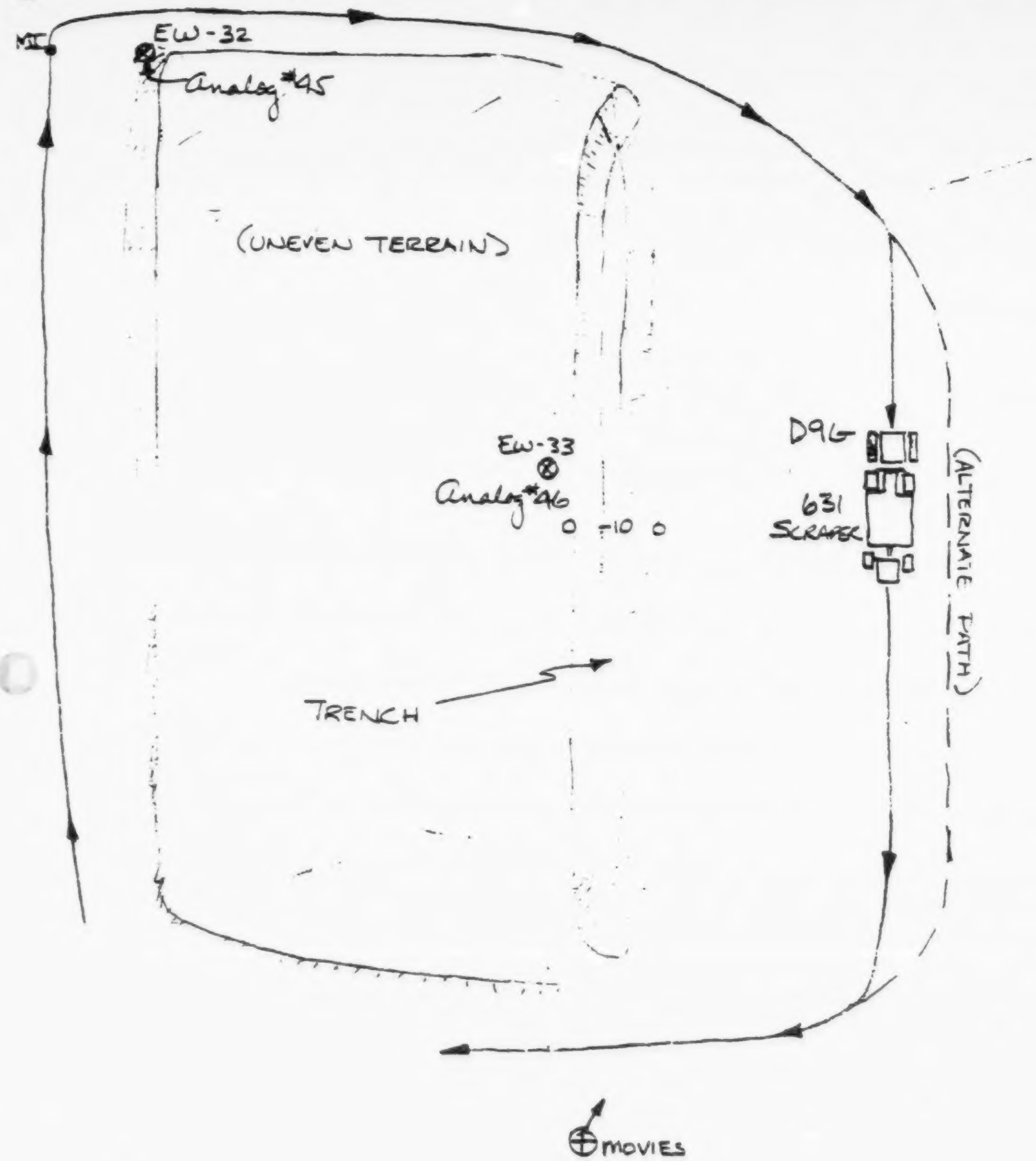
HIGHWAY: I - 75

DATE: Jan 1980

SITE LOCATION: Earthwork Site IX

	Sample	Location	Date	Equipment	L_{max} @ __ ft.	L_{max} @ 50 ft.	L_{max} @ __ ft.
IMI	47-45	EW-33	1-21	Cat 631B Scraper		92	
				631D "		84	
				631C "		84	
Posky	47-44		1-21	Cat 631B Scraper		95	
				631D "		84	

DIAGRAM 1-21A
BORROW EXCAVATION


N
40'
MI
EW-32
Analog #45
(UNEVEN TERRAIN)
EW-33
Analog #46
0 -10 0
D9G
631
SCRAPER
(ALTERNATE PATH)
TRENCH
MOVIES

Measurement Site Data

Highway: I-75 Date: Jan. 1980

Site Location: Mobilization - Stockpiling Gravel for Batch Plant

Type of Measurements:

☐ Community ☑ Activity ☐ Propagation

☐ Site Boundary ☑ Single Equipment ☐ Movies

Soil/Terrain Conditions: Flat, compacted dirt between microphone and stockpile. Stockpile height approximately 8-10 feet.

Machinery Description:

1 Cat 950 Front End Loader

Mack Tractor-Semitrailer Dump Trucks

Mack Single-Chassis Dump Trucks

Miscellaneous Information:

Note: Trucks measured at this site were forbidden by the owner to bang their tailgates.

DATA LOG SUMMARY

HIGHWAY: I-75

DATE: Jan 1980

SITE LOCATION: Mobilization

Sample	Location	Date	Time	Dur.	Site Diag.	Comments	Reduced
47-54	M-1	1-21			1-21F	Dumping stockpile mat'l	✓
-55	M-1				↓	Cat 950 Loader IMI @ 50'	✓
-56	M-1					Dumping stockpile mat'l	—
-57	M-2				1-21G	Dumptruck passbys	—

ACTIVITY NOISE MEASUREMENTS

HIGHWAY: I-75 DATE: Jan 1980

SITE LOCATION: Mobilization

Sample	Location	Date	Dur.	L_{eq}	L_{99}	L_{90}	L_{50}	L_{10}	L_1
54		1-21	:06	71.8	62	67	70	74	82
56		↓	:08	69.9	59	64	68	72	79
57			:11	64.0	57	57	58	65	76

Single Event Levels & IMI

SINGLE EQUIPMENT/PROPAGATION NOISE MEASUREMENTS

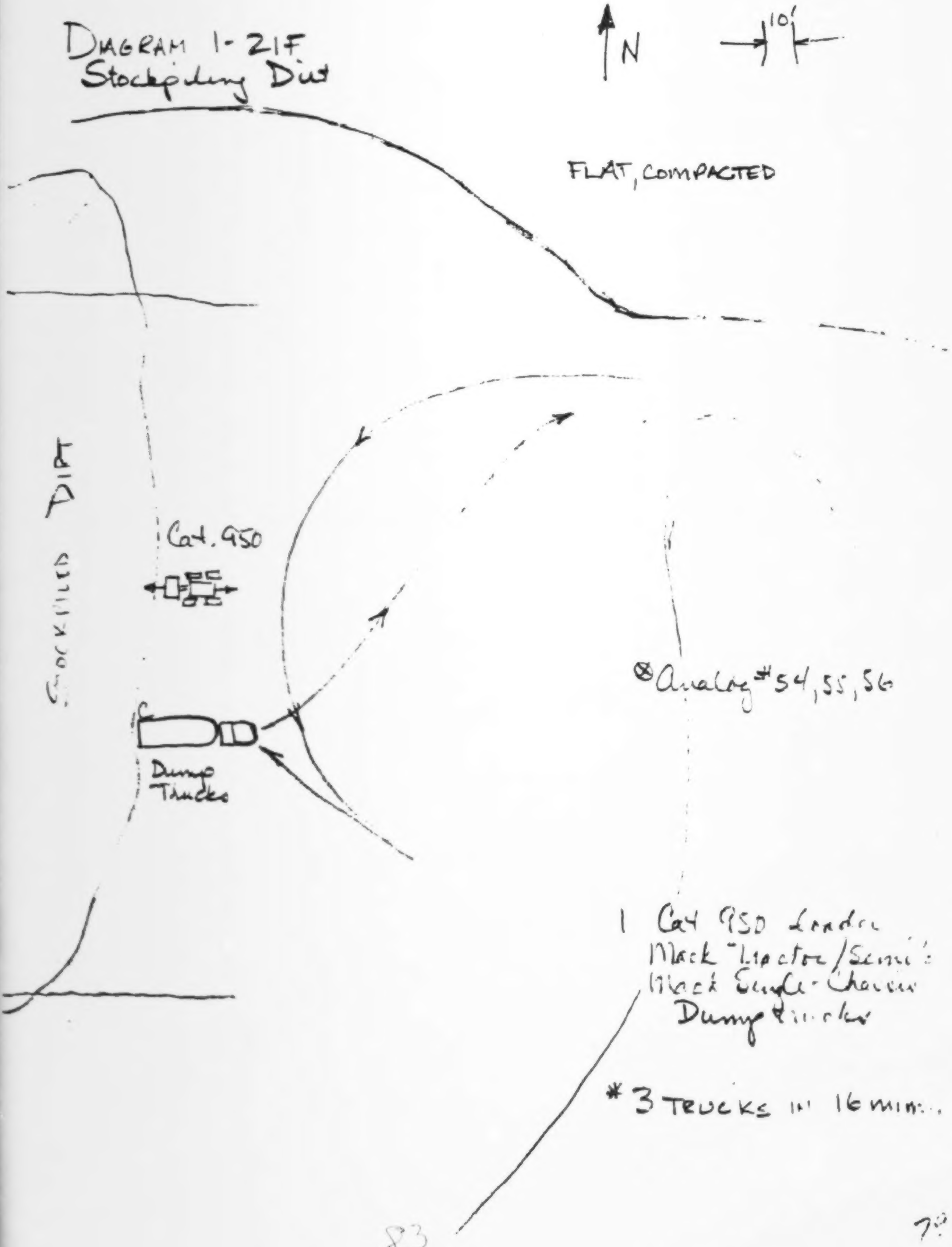
HIGHWAY: I-75

DATE: Jan 1980

SITE LOCATION: Mobilization

	Sample	Location	Date	Equipment	L_{max} @ ___ ft.	L_{max} @ ___ ft.	L_{max} @ ___ ft.
SEL's	57			Dump Truck Passbys:			
				Loaded		69 @ 55'	
				Loaded		75 @ 55'	
				Loaded		73 @ 60'	
				Loaded		77 @ 55'	
				Empty		81 @ 30'	
				Loaded		72 @ 60'	
				Empty w/ Tailgate noise		75 @ 55'	
				Empty		74 @ 53'	
IMI	55			Cat 950 Loader		77 @ 50'	

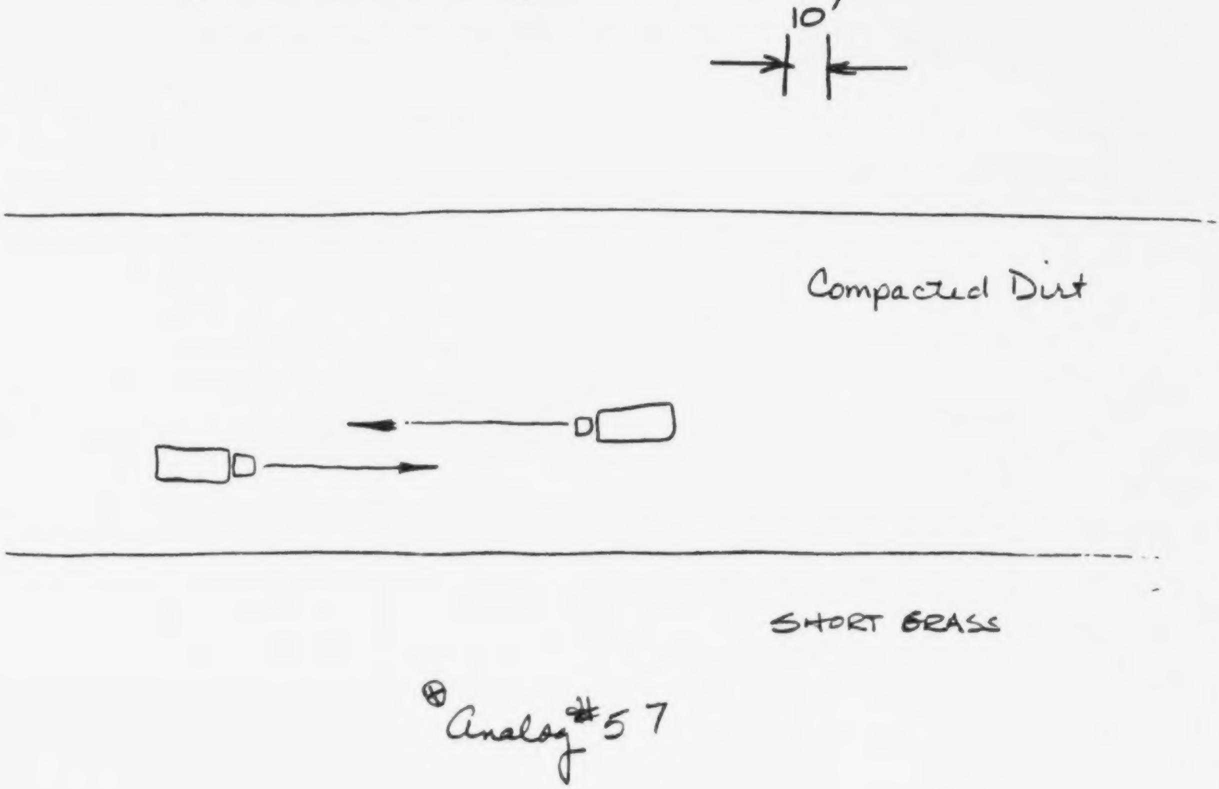
DIAGRAM 1-21F
Stockpiling Dirt


N
10'
FLAT, COMPACTED
STOCKPILED DIRT
Cat. 950
Dump Trucks
⊗ Analog #54, 55, 56

1 Cat 950 Loader
Mack Tractor/Semi's
Mack Single-Chassis
Dump Trucks

*3 TRUCKS in 16 min...

DIAGRAM 1-21G
Dump Truck Passbys

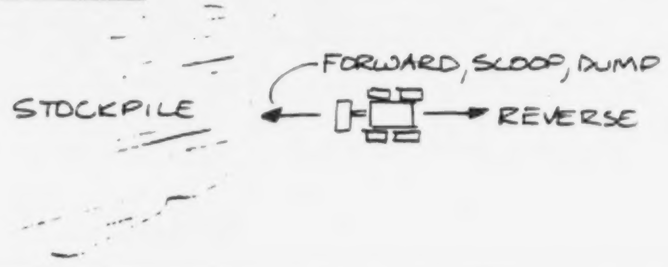

10'
Compacted Dirt
SHORT GRASS
⊗ Analog #57

EQUIPMENT ACTIVITY ANALYSIS

HIGHWAY: I-75 DATE: Jan. 1980

EQUIPMENT CYCLE: Cat 950 Front End Loading; Shaping Gravel Stockpile After Trucks Dump Load

Motion Diagram:



Motion Characteristics	Measured Time								
	Motion	Cycle	Motion	Cycle	Motion	Cycle	Motion	Cycle	Average
F/S/D	0	:14	0	:15					
REVERSE	:14	:05	:15	:04					
F/S/D	:19	:17	:19	:18					
REVERSE	:36	:07	:37	:07					
F/S/D	:43	:14	:44	:16					
REVERSE	1:01	:04	1:00	:05					
F/S/D	1:05	–	1:05	:17					
REVERSE	–	–	1:21	:05					
F/S/D	–	–	1:26	:16					
REVERSE	–	–	1:42	:05					
F/S/D	–	–	1:47	–					

Measurement Site Data

Highway: I - 75 Date: Jan 1980

Site Location: Clearing Site I; Front end loader stacking fallen trees - at St. Rd 672

Type of Measurements:

☐ Community ☑ Activity ☐ Propagation

☐ Site Boundary ☐ Single Equipment ☐ Movies

Soil/Terrain Conditions: Flat area; numerous fallen trees around work area

Machinery Description:

1 Terex 72-31B Front end loader with rake

Miscellaneous Information:

- Loader operated over several different paths during the course of the measurement.
- IMI of loader was taken on 1/24

DATA LOG SUMMARY

HIGHWAY: I-75

DATE: Jan 1980

SITE LOCATION: Clearing Site I

Sample	Location	Date	Time	Dur.	Site Diag.	Comments	Reduced
47-14	CS-1	1-15			1-15K	Clearing trees	
-82	CS-6	1-24				Terex Loader IMI @ 50'	
47-15	CS-7	1-15			1-15K	Clearing trees	

ACTIVITY NOISE MEASUREMENTS

HIGHWAY: ____________ DATE: ____________

SITE LOCATION: ______________________________

Sample	Location	Date	Dur.	L_{eq}	L_{99}	L_{90}	L_{50}	L_{10}	L_{1}
47-14	CS-1	1-15	:10	78.6	60	66	73	84	88
47-15		↓	:08	73.6	61	66	72	77	81

SINGLE EQUIPMENT/PROPAGATION NOISE MEASUREMENTS

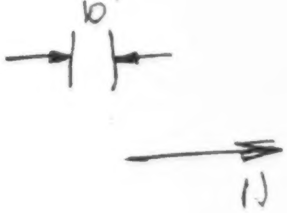
HIGHWAY: I-75 DATE: Jan 1980

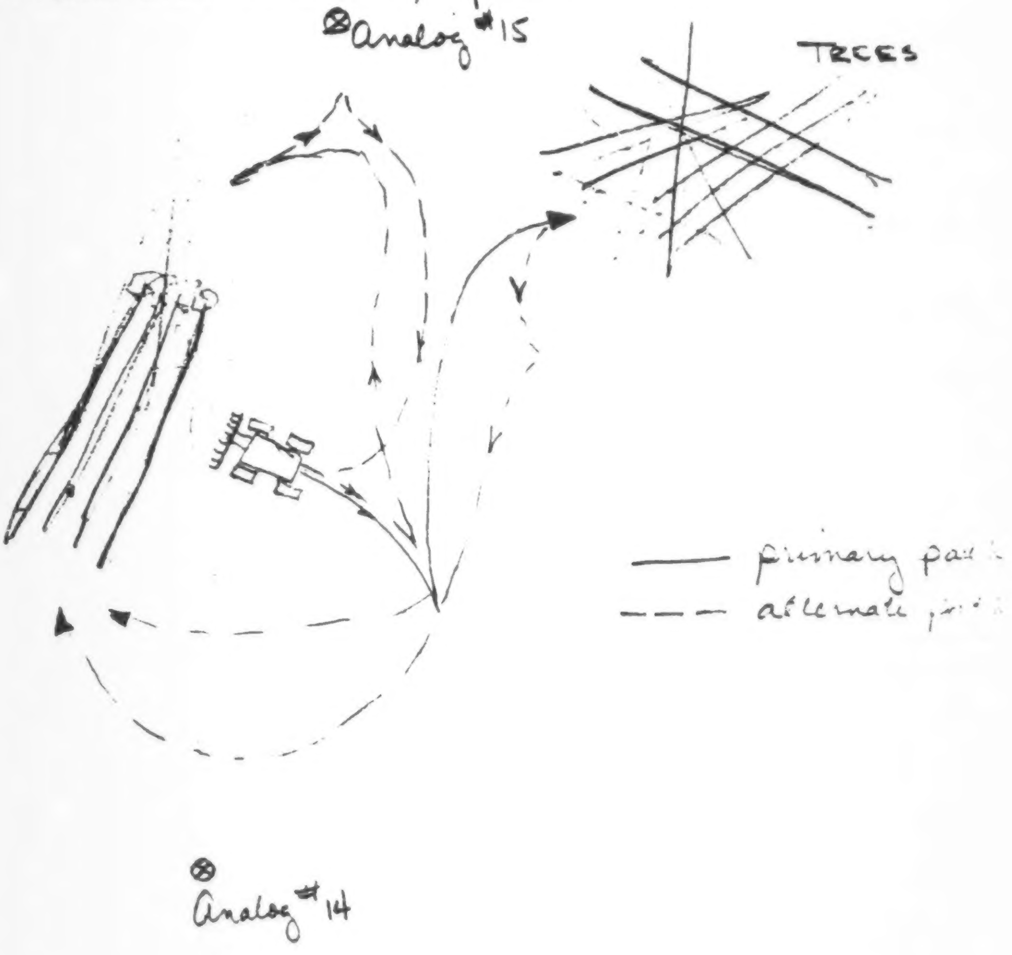
SITE LOCATION: Clearing Site I

Sample	Location	Date	Equipment	L_{max} @ ___ ft.	L_{max} @ 50 ft.	L_{max} @ ___ ft.
82			Terex 72-31B		82	

DIAGRAM 1-15K
Clearing fallen trees

Terex 72-31B
Front End loader w/ fork




Analog #15
TREES
primary pa
alternate p
Analog #14

Measurement Site Data

Highway: I-75

Date: Jan. 1980

Site Location: Clearing Site II - near town of Riverview

Type of Measurements:

☑ Community
☑ Site Boundary
☑ Activity
☑ Single Equipment
☐ Propagation
☑ Movies

Soil/Terrain Conditions: Flat; Heavily wooded and overgrown with ground cover. Wet soil

Machinery Description:

1 Cat D7G Dozer with muffler
1 Cat D8H Dozer with muffler
1 Terex 72-31B Front End Loader w/ rake

Miscellaneous Information:

Cat D7G @ Position #1 for Samples 58 & 59; and @ Position #2 for Samples 62.

DATA LOG SUMMARY

HIGHWAY: I-75

DATE: Jan. 1980

SITE LOCATION: Clearing Site II

Sample	Location	Date	Time	Dur.	Site Diag.	Comments	Reduced
47-58	CS-2	1-22			1-22A 1-22B	D7G Dozer activity meas.; w/movies	
-59	-				1-22A	D7G Dozer IMI's @ 50'	
-60	CS-3				1-22A 1-22B	Terex Loader activity; w/movies	
-61	-				1-22A	Terex Loader IMI's @ 25'	
-62	CS-4				1-22A	Clearing; west side of site	
-63	-				-	D8H Dozer IMI's @ 50'	
178-3	CS-5				1-22B	Community; long-term sample	

ACTIVITY NOISE MEASUREMENTS

HIGHWAY: I-75　　DATE: Jan 1980

SITE LOCATION: Clearing Site II

Sample	Location	Date	Dur.	L_{eq}	L_{99}	L_{90}	L_{50}	L_{10}	L_{1}
58	CS-2	1-22	:11	73.8	58	63	72	78	81
60			:09	77.1	65	69	75	81	84
62			:21	68.9	60	63	68	72	74

SITE BOUNDARY/COMMUNITY NOISE MEASUREMENTS

HIGHWAY: I - 75 DATE: Jan 1980

SITE LOCATION: Clearing Site II

Sample	Location	Date	Dur.	L_{eq}
178-3	CS-5	1-22	6:00	64.4

SINGLE EQUIPMENT/PROPAGATION NOISE MEASUREMENTS

HIGHWAY: I-75

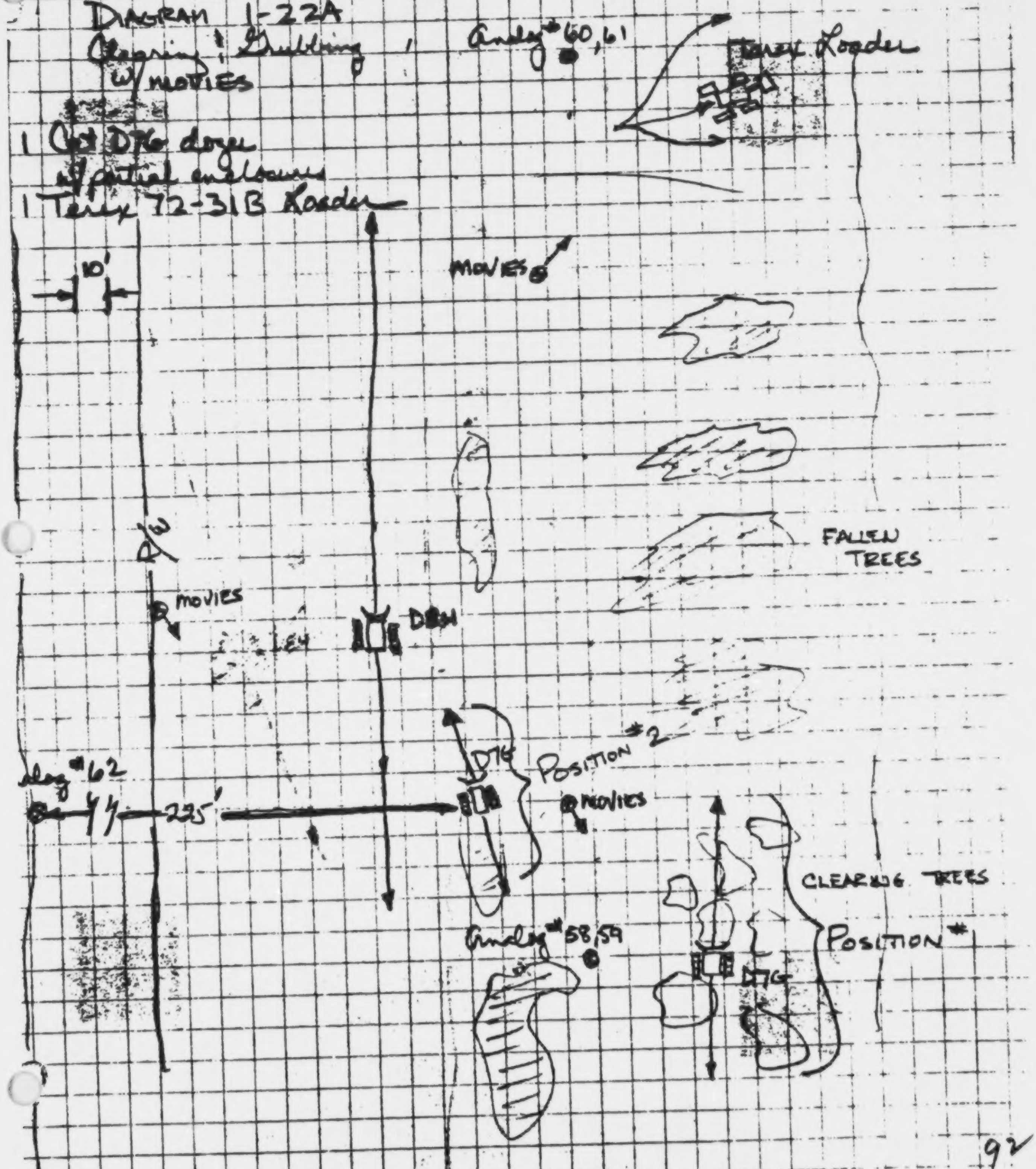
DATE: Jan 1980

SITE LOCATION: Clearing Site II

	Sample	Location	Date	Equipment	L_{max} @ 25 ft.	L_{max} @ 50 ft.	L_{max} @ 100 ft.
IMI's	59		1-22	D7G Dozer		76	
	61			Terex Loader	83		
	63			D8H Dozer		77	
	72						
SEL's	(60)			Cat D7G	82		
	62			Cat D8H			74
				" "			75
				" "			76

DIAGRAM 1-22A
Clearing & Grubbing
w/ MOVIES

1 Cat D7G dozer
w/ partial enclosure
1 Terex 72-31B Loader

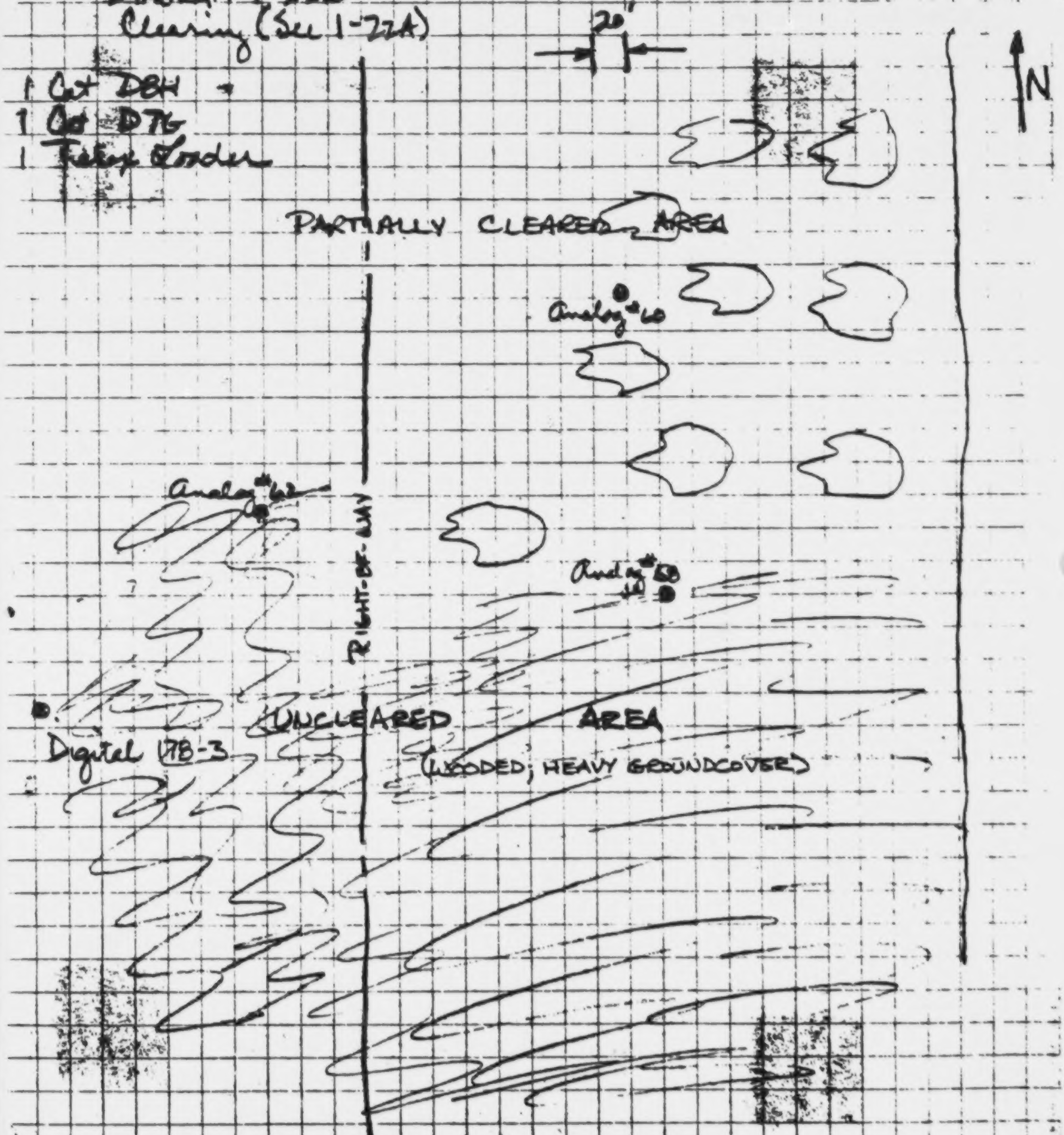

Analog #60,61
Terex Loader
MOVIES
10'
R/W
movies
LE4
D8H
alog #62
225'
D7G
POSITION #2
movies
FALLEN TREES
CLEARING TREES
Analog #58,59
D7G
POSITION #

92

96

DIAGRAM 1-22B
Clearing (See 1-22A)

1 Cat D8H
1 Cat D7G
1 Tracked Loader


20"
N
PARTIALLY CLEARED AREA
Analog #60
Analog #62
RIGHT-OF-WAY
Analog #58
Digital 178-3
UNCLEARED AREA
(WOODED; HEAVY GROUNDCOVER)

NOTE: Clearing op. is proceeding South

Measurement Site Data

Highway: I-75 Date: Jan 1980

Site Location: Clearing Site III; stacking & burning cleared material - at St. Rd. 672

Type of Measurements:

☐ Community ☑ Activity ☐ Propagation

☐ Site Boundary ☑ Single Equipment ☐ Movies

Soil/Terrain Conditions: Flat, cleared area

Machinery Description:

1 Cat 955L Track Loader

1 Terex 72-31B Front End Loader with rake (same machine as used at Clearing Site I).

Briggs & Stratton 3 HP Gasoline Engine Fans

Miscellaneous Information:

Fans used to provide draft to flames

98

DATA LOG SUMMARY

HIGHWAY: I-75

DATE: Jan 1980

SITE LOCATION: Clearing Site III

Sample	Location	Date	Time	Dur.	Site Diag.	Comments	Reduced
47-77	CS-6	1-24	1410		1-24C	Cat 955L IMI's @ 50'	
-78	CS-7				↓	Burning mat'l; Loader + Fans	
-79	CS-8				↓	Fan @ 50' (DOZER NOT OPERATING)	
-80	CS-9				1-24D	Burning mat'l; Terex + Fans	
-81	CS-10				↓	" " ; Near fans	
-82	CS-11				↓	Terex Loader IMI's @ 50'	

ACTIVITY NOISE MEASUREMENTS

HIGHWAY: I-75

DATE: Jan 1980

SITE LOCATION: Clearing Site III

Sample	Location	Date	Dur.	L_{eq}	L_{99}	L_{90}	L_{50}	L_{10}	L_{1}
78	CS6	1-24	:05	73.3	67	69	73	76	78
80	CS-9	↓	:05	75.4	65	68	75	78	82
81	" "		:02	76.0	73	73	76	78	79
79	CS-8	1-24	:02	81.5	79	80	82	82	83

SINGLE EQUIPMENT/PROPAGATION NOISE MEASUREMENTS

HIGHWAY: I-75 DATE: Jan 1980

SITE LOCATION: Clearing Site III

	Sample	Location	Date	Equipment	L_{max} @ ___ ft.	L_{max} @ 50 ft.	L_{max} @ 65 ft.
IMI's	77	CS-6	1-24	Cat 955L		79	
	82	CS-11	↓	Terex Loader		80	
SEL's	78			Terex Loader			79
	79			Fan		83	
	80			Terex Loader			78
	81			2 Fans			79 @ 90 FT.

101

97

Diagram 1-24C

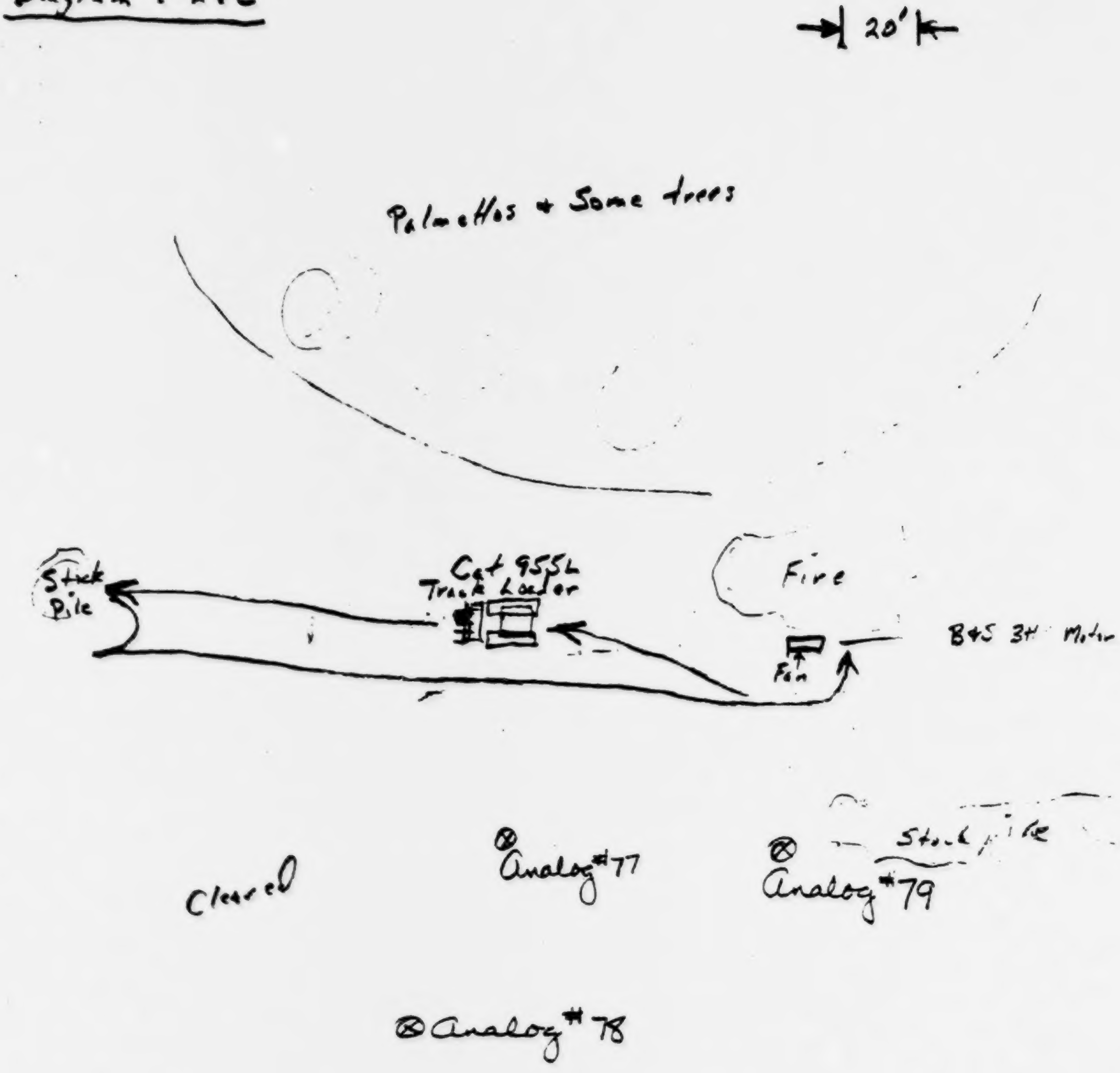
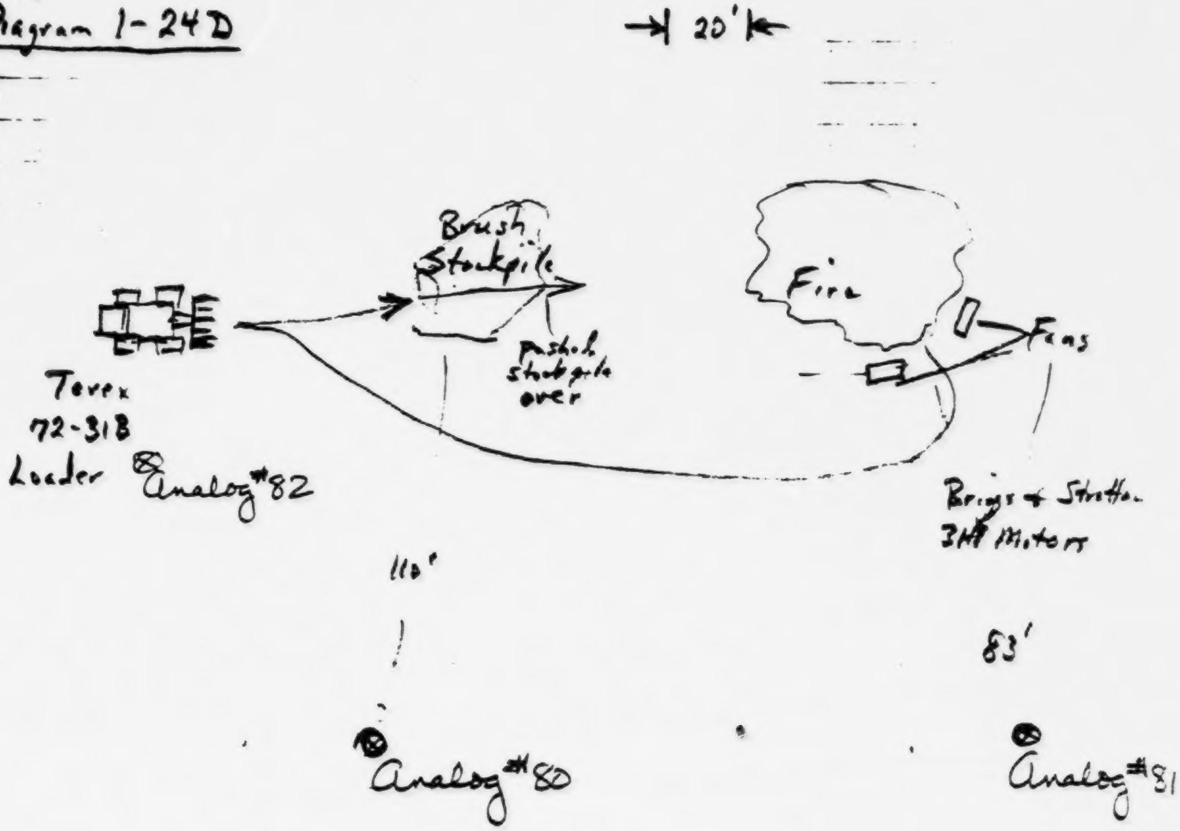

20'
Palmettos & Some trees
Stock Pile
Cat 955L
Track Loader
Fire
Fan
B&S 3H Motor
Stock pile
Cleared
Analog #77
Analog #79
Analog #78

Diagram 1-24D


20'
Brush Stockpile
Fire
Fans
Pushed stockpile over
Terex 72-31B Loader
Analog #82
Briggs & Stratton 3HP Motors
110'
83'
Analog #80
Analog #81

Measurement Site Data

Highway: I - 75　　Date: Jan. 1980

Site Location: Bridge Site I - Pile Driving

Type of Measurements:

☐ Community　☑ Activity　☐ Propagation

☐ Site Boundary　☐ Single Equipment　☐ Movies

Soil/Terrain Conditions:

Machinery Description:

Crane with compressor & pile driver

Miscellaneous Information:

Pile driver was located on top of approach ramp fill, approximately 15 feet above microphone position.

150

ACTIVITY NOISE MEASUREMENTS

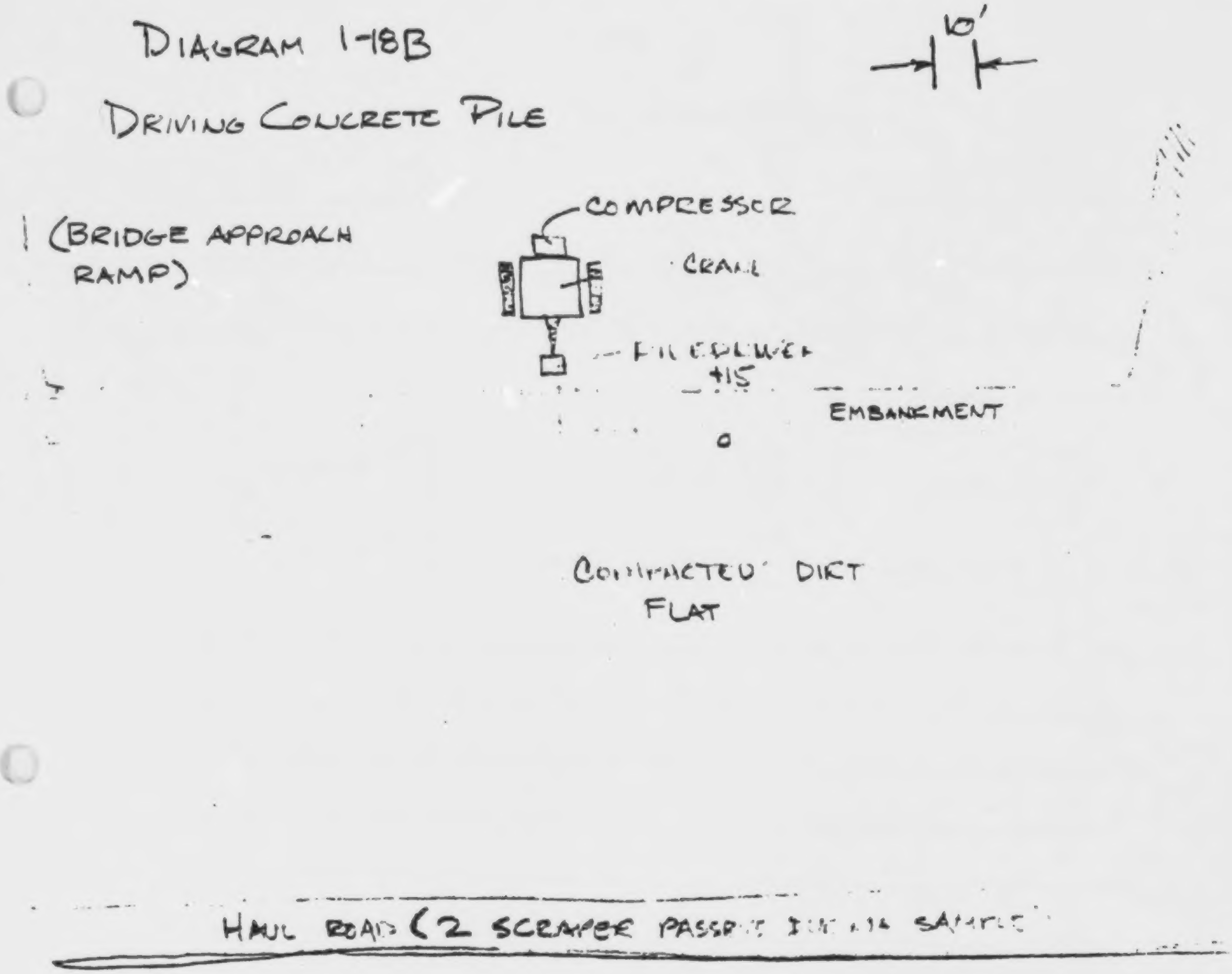
HIGHWAY: I-75 DATE: Jan. 1980

SITE LOCATION: Bridge Site I

Sample	Location	Date	Dur.	L_{eq}	L_{99}	L_{90}	L_{50}	L_{10}	L_1	
47-35	BS-1	1-18	:05	85.4	68	71	80	90	93	FAST T.C.
				85.2	80	82	85	87	89	SLOW T.C.

DIAGRAM 1-18B

DRIVING CONCRETE PILE


10'
(BRIDGE APPROACH RAMP)
COMPRESSOR
CRANE
PILEDRIVER
+15
EMBANKMENT
0
COMPACTED DIRT FLAT
HAUL ROAD (2 SCRAPER PASSES DURING SAMPLE

Analog 35

* 80 impacts per minute

*Approximately 15 minutes per pile

Measurement Site Data

Highway: I-75

Date: Jan 1980

Site Location: Bridge Site II - Concrete Pour For Bridge Abutment

Type of Measurements:

☐ Community ☑ Activity ☐ Propagation

☐ Site Boundary ☐ Single Equipment ☐ Movies

Soil/Terrain Conditions: Ground consisted of dry, compacted fill which represents the approach ramp. Steep embankment directly behind micro-phone position.

Machinery Description:

American 4250 Crane with concrete bucket

IH Paystar 500 Concrete Trucks w/diesel engines

Concrete Vibrator with gasoline engine generator.

Miscellaneous Information:

DATA LOG SUMMARY

HIGHWAY: I-75

SITE LOCATION: Bridge Site II

DATE: Jan. 1980

Sample	Location	Date	Time	Dur.	Site Diag.	Comments	Reduced
47-47	B-2	1-21			1-21B	Bridge Abutment Concrete Pour	

ACTIVITY NOISE MEASUREMENTS

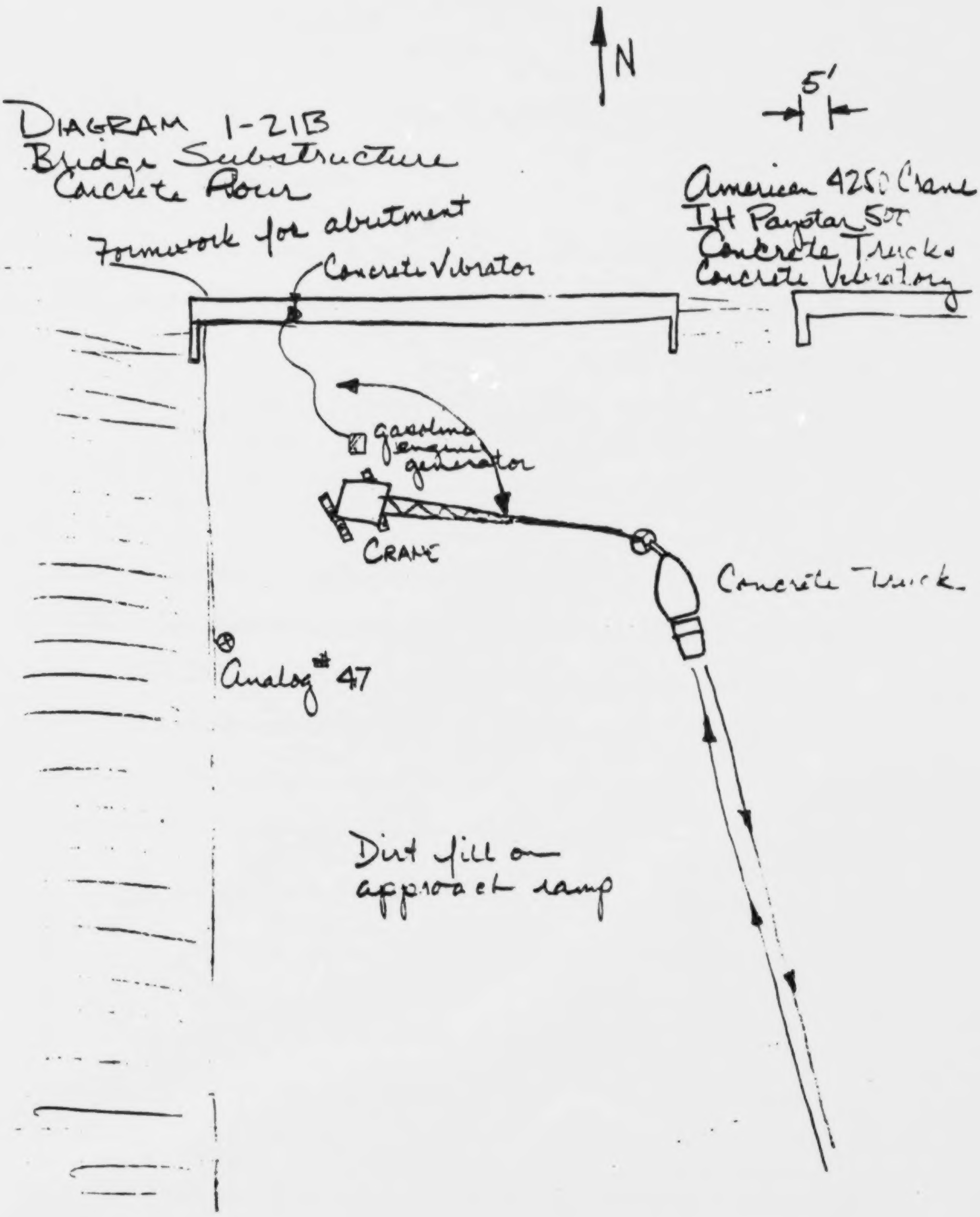
HIGHWAY: I-75

DATE: JAN 1980

SITE LOCATION: BRIDGE SITE II

Sample	Location	Date	Dur.	L_{eq}	L_{99}	L_{90}	L_{50}	L_{10}	L_1
47-47	B-2	1-21	:15	72.8	68	69	72	75	78

DIAGRAM 1-21B
Bridge Substructure
Concrete Pour


N
5'
American 4250 Crane
IH Paystar 500
Concrete Trucks
Concrete Vibratory
Formwork for abutment
Concrete Vibrator
gasoline engine generator
Crane
Concrete Truck
Analog # 47
Dirt fill on approach ramp

Measurement Site Data

Highway: I-75

Date: Jan. 1980

Site Location: Bridge Site III - Demolition of Bridge/Roadway Joint For Eventual Repair

Type of Measurements:

☐ Community ☑ Activity ☐ Propagation

☐ Site Boundary ☑ Single Equipment ☐ Movies

Soil/Terrain Conditions: Bridge deck and roadway were completely finished. Therefore, surface between microphone and work area was flat concrete. 3-foot high parapets along each side of bridge

Machinery Description:

1 Concrete Saw with gasoline engine

1 Spiro Flo 175/80 Compressor with side enclosures

2 Portable Pneumatic Jackhammers

1 Fiat Allis H-B 745 (remained idle during sample)

Miscellaneous Information: Joints were first cut in concrete using ie saw (Diagram 1-22E). Jackhammers were then used to break out concrete (Diagram 1-25B). Broken concrete was loaded into bucket on the front end loader. Loader remaine idle during sample.

DATA LOG SUMMARY

HIGHWAY: I-75

DATE: Jan 1980

SITE LOCATION: Bridge Site III

Sample	Location	Date	Time	Dur.	Site Diag.	Comments	Reduced
47-66	BS-3	1-22			1-22E	Concrete Saw	
-84	BS-4	1-25			1-25B	Concrete Demolition	

ACTIVITY NOISE MEASUREMENTS

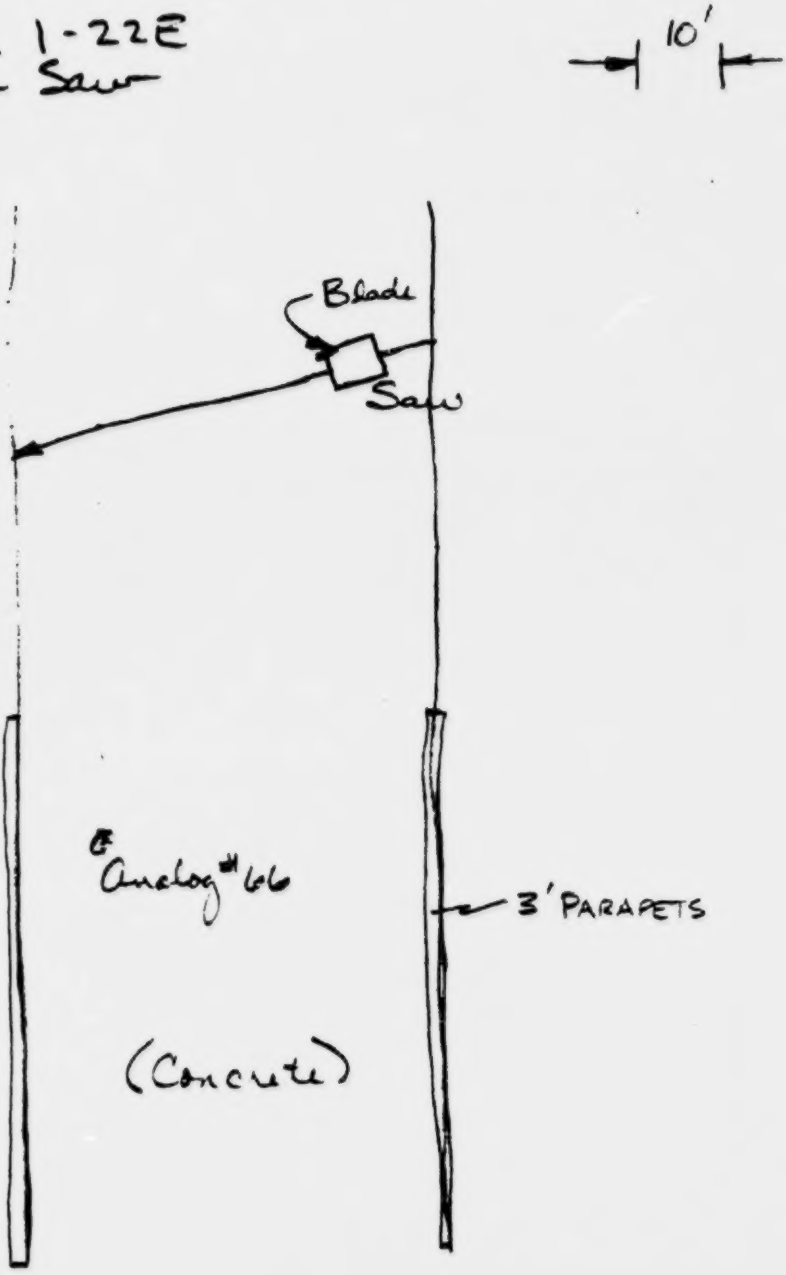
HIGHWAY: I-75

DATE: Jan 1980

SITE LOCATION: Bridge Site III

Sample	Location	Date	Dur.	L_{eq}	L_{99}	L_{90}	L_{50}	L_{10}	L_1
66	BS-3	1-22	:08	88	84	86	88	89	91
84	BS-4	1-25	:15	83.9	69	70	83	88	90

DIAGRAM 1-22E
Concrete Saw


10'
Blade
Saw
℄ Analog #66
3' PARAPETS
(Concrete)

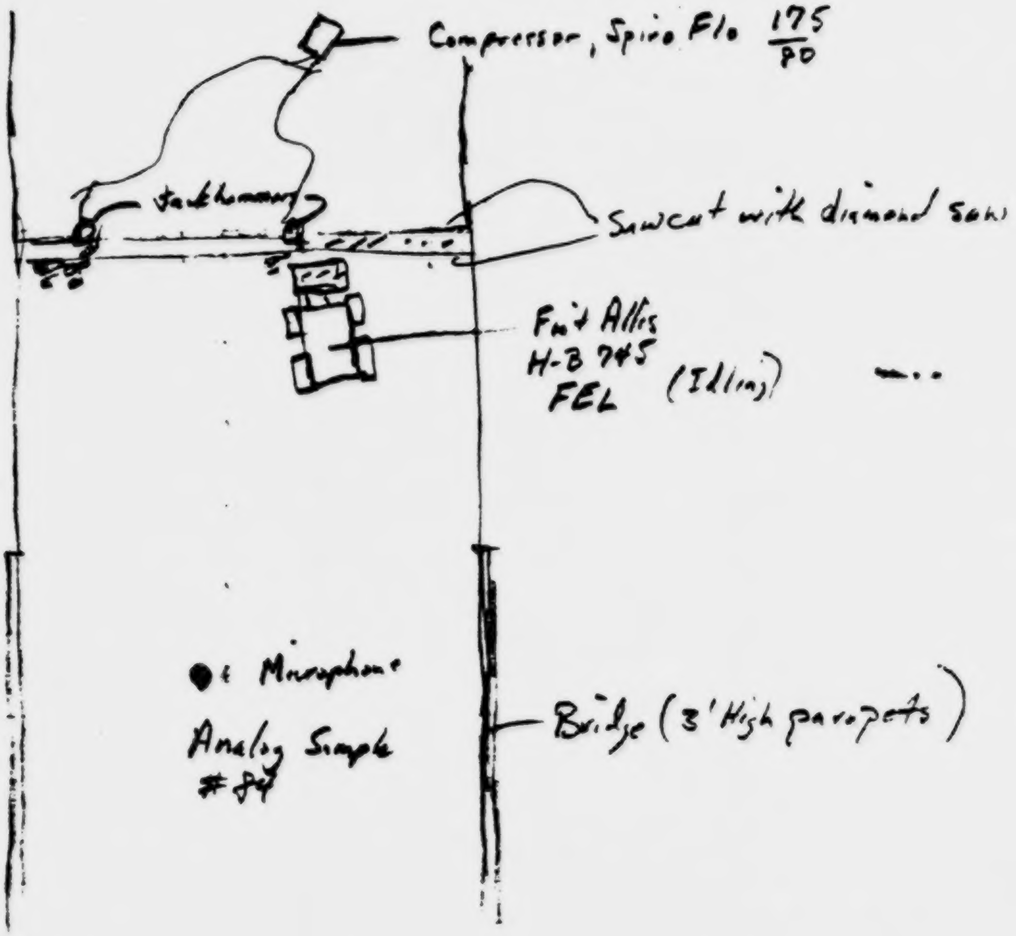
NOTES

1. Saw operates at a constant RPM

2. Saw cutting rate = 4 feet per minute

Diagram 1-25B Bridge Work

Jackhammers removing concrete


10'
Compressor, Spiro Flo 175/80
Jackhammers
Sawcut with diamond saw
Fiat Allis
H-B 745
FEL (Idling)
● = Microphone
Analog Sample
#84
Bridge (3' High parapets)

Measurement Site Data

Highway: I-75

Date: Jan. 1980

Site Location: Bridge Site IV - Substructure Excavation, Formwork, Concrete Pour

Type of Measurements:

☐ Community ☑ Activity ☐ Propagation

☐ Site Boundary ☐ Single Equipment ☑ Movies

Soil/Terrain Conditions: Site bounded on north and south by approach ramp embankment. Terrain in working area was flat, consisting of compacted earth or pavement.

Machinery Description:

1 American 737 Crane w/ Headache Ball
1 American CC50 Crane w/ Pneumatic Pile Driver
1 Grace WC-59 Crane w/ Concrete Bucket
1 Crane (Make not known); worked intermittently on north approach ramp
1 Cat 235 Backhoe
1 Ford Single Chassis Dump Truck
1 IH Paystar 500 Concrete Truck
1 Homelite 300 GPM Pump
1 Portable Generator and Skil Saw

Miscellaneous Information:

SEE ATTACHED SUMMARY OF ACTIVITIES

DATA LOG SUMMARY

HIGHWAY: I-75

DATE: Jan 1980

SITE LOCATION: Bridge Site IV

Sample	Location	Date	Time	Dur.	Site Diag.	Comments	Reduced
47-86	BS-5	1-28			1-28B	On top of north approach ramp	
87	BS-6	↓			↓	NW corner; at foot of embankment	
88	BS-7					In vicinity of crane w/headache ball	
89	BS-8					In vicinity of pile driver	
90	BS-9					On top of south approach ramp; MOVIES	

ACTIVITY NOISE MEASUREMENTS

HIGHWAY: I-75

DATE: Jan 1982

SITE LOCATION: Bridge Site IV

Sample	Location	Date	Dur.	L_{eq}	L_{99}	L_{90}	L_{50}	L_{10}	L_1
86A		1-28	:17	75.6	66	68	72	79	85
86B			:08	80.2	71	73	77	85	87
86C			:05	74.2	70	71	73	76	81
86(TOTAL)			:26	77.5	66	68	73	82	86
87			:09	71.4	67	69	71	73	76
88			:02	74.9	72	73	74	77	80
89			:12	81.9	71	74	79	86	89
90A			:17	69.9	-	-	-	-	-
90B			:17	69.9	63	66	68	73	76

SINGLE EQUIPMENT/PROPAGATION NOISE MEASUREMENTS

HIGHWAY: I-75

DATE: Jan 1980

SITE LOCATION: Bridge Site IV

SEL's

Sample	Location	Date	Equipment	L_{max} @ ___ ft.	L_{max} @ 50 ft.	L_{max} @ ___ ft.
~~86~~			~~CONCRETE SAW (80FT.) w/ COMPRESSOR (100FT.)~~			~~79~~
86			Grove Crane; Moving		86	
86			Pile Driver			85@165FT.
87			Cat 235 Backhoe			82@160FT.
88			AMERICAN CRANE W/ BREAKER BALL		83	
89			Grove Crane; Lifting		91	

Not Pasky

119

115

DIAGRAM 1-28B:

SUMMARY OF ACTIVITIES

Following is a summary of activities depicted in Diagram 1-28B. In total, this operation represents the bridge substructure excavation and construction. Traffic on the surface street had been detoured to the temporary road. Traffic count on this street was low.

a. A crane with a headache ball would intermittently break up the old pavement (See Sample #88).

b. A trench had been dug at the end of the old pavement, exposing an old box culvert that had to be removed. The Cat. backhoe was excavating broken concrete and dirt and loading it into the dump truck.

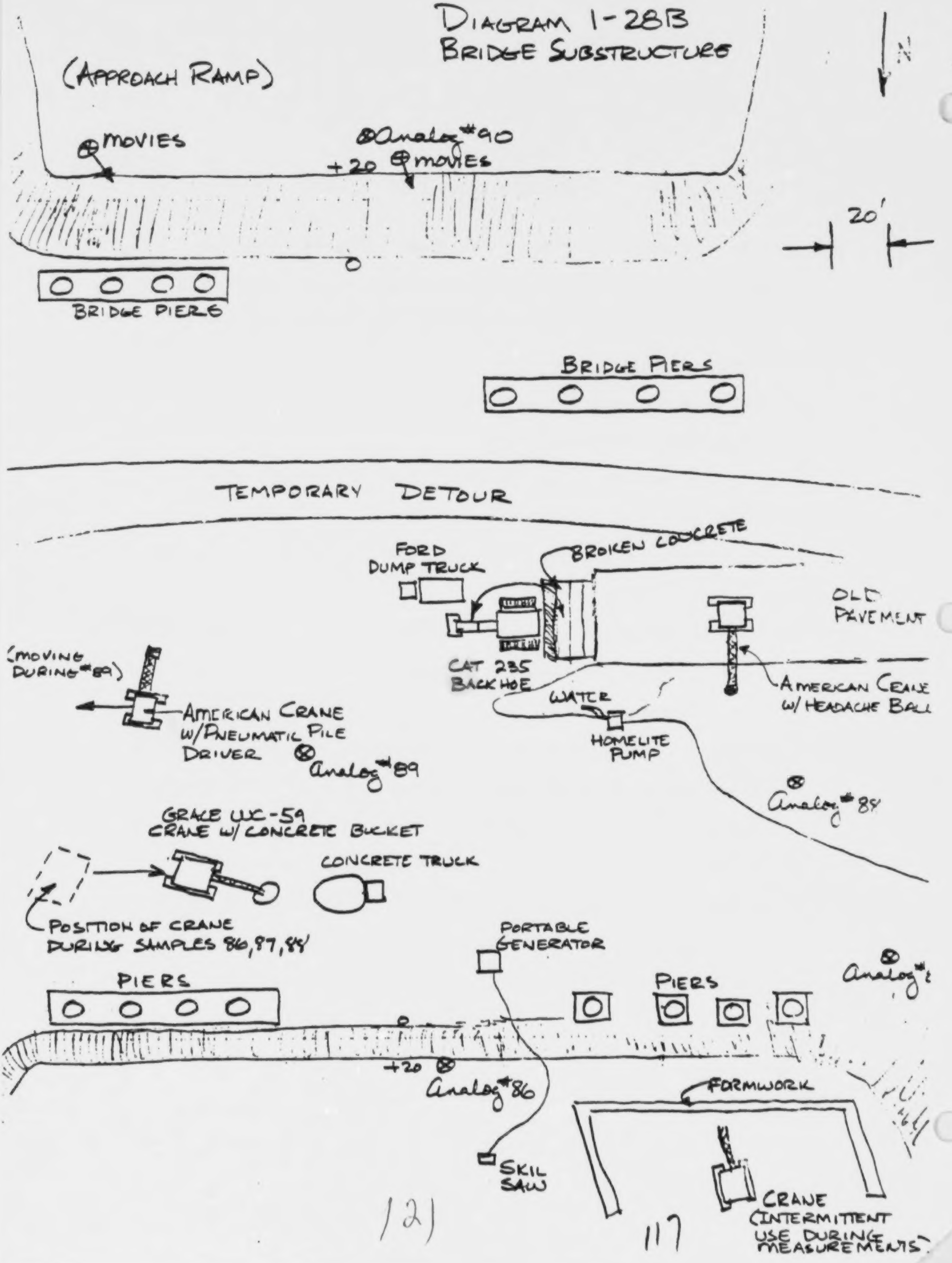
c. A crane with a pile driver was driving a series of concrete piles for bridge pier footings. Total time to drive one pile was 7 minutes, 15 seconds.

d. A crane with a concrete bucket transported concrete from the truck to the top of the pier formwork during Samples #89, 90. During earlier samples, this crane was helping to repair an installation.

e. A pump was dewatering in the area of old pavement and the trench.

f. A Skil hand saw was used to cut wood for formwork on top of the north approach ramp. The saw received power from a portable generator located at the bottom of the approach ramp embankment.

DIAGRAM 1-28B
BRIDGE SUBSTRUCTURE


N
(APPROACH RAMP)
⊗ MOVIES
⊗ Analog #90
+20 ⊗ MOVIES
20'
BRIDGE PIERS
BRIDGE PIERS
TEMPORARY DETOUR
FORD DUMP TRUCK
BROKEN CONCRETE
OLD PAVEMENT
CAT 235 BACK HOE
AMERICAN CRANE W/ HEADACHE BALL
WATER
HOMELITE PUMP
(MOVING DURING #89)
AMERICAN CRANE W/PNEUMATIC PILE DRIVER
⊗ Analog #89
⊗ Analog #88
GRACE LWC-59 CRANE W/ CONCRETE BUCKET
CONCRETE TRUCK
POSITION OF CRANE DURING SAMPLES 86, 87, 88
PORTABLE GENERATOR
PIERS
PIERS
⊗ Analog #
+20 ⊗ Analog #86
FORMWORK
SKIL SAW
CRANE (INTERMITTENT USE DURING MEASUREMENTS)

Measurement Site Data

Highway: I-75

Date: Jan 1980

Site Location: Bridge Site V - Concrete Saw on Bridge Abutment

Type of Measurements:

☐ Community ☑ Activity ☐ Propagation

☐ Site Boundary ☐ Single Equipment ☐ Movies

Soil/Terrain Conditions: Flat, open area in vicinity of microphone. Compressor at grade with mic. Concrete Saw on top of approach ramp fill, 20 feet above mic.

Machinery Description:

1 Hand Held Concrete Saw

1 Joy D185QP Compressor with enclosure

Miscellaneous Information:

DATA LOG SUMMARY

HIGHWAY: I-75

DATE: Jan 1980

SITE LOCATION: Bridge Site V

Sample	Location	Date	Time	Dur.	Site Diag.	Comments	Reduced
47-85	BS-10	1-28			1-28A	Concrete Saw; 20' above mic	

ACTIVITY NOISE MEASUREMENTS

HIGHWAY: I-75

DATE: Jan 1980

SITE LOCATION: Bridge Site V

Sample	Location	Date	Dur.	L_{eq}	L_{99}	L_{90}	L_{50}	L_{10}	L_1
85		1-28	:07	74.8	71	72	75	77	78

SINGLE EQUIPMENT/PROPAGATION NOISE MEASUREMENTS

HIGHWAY: I-75

DATE: Jan 1980

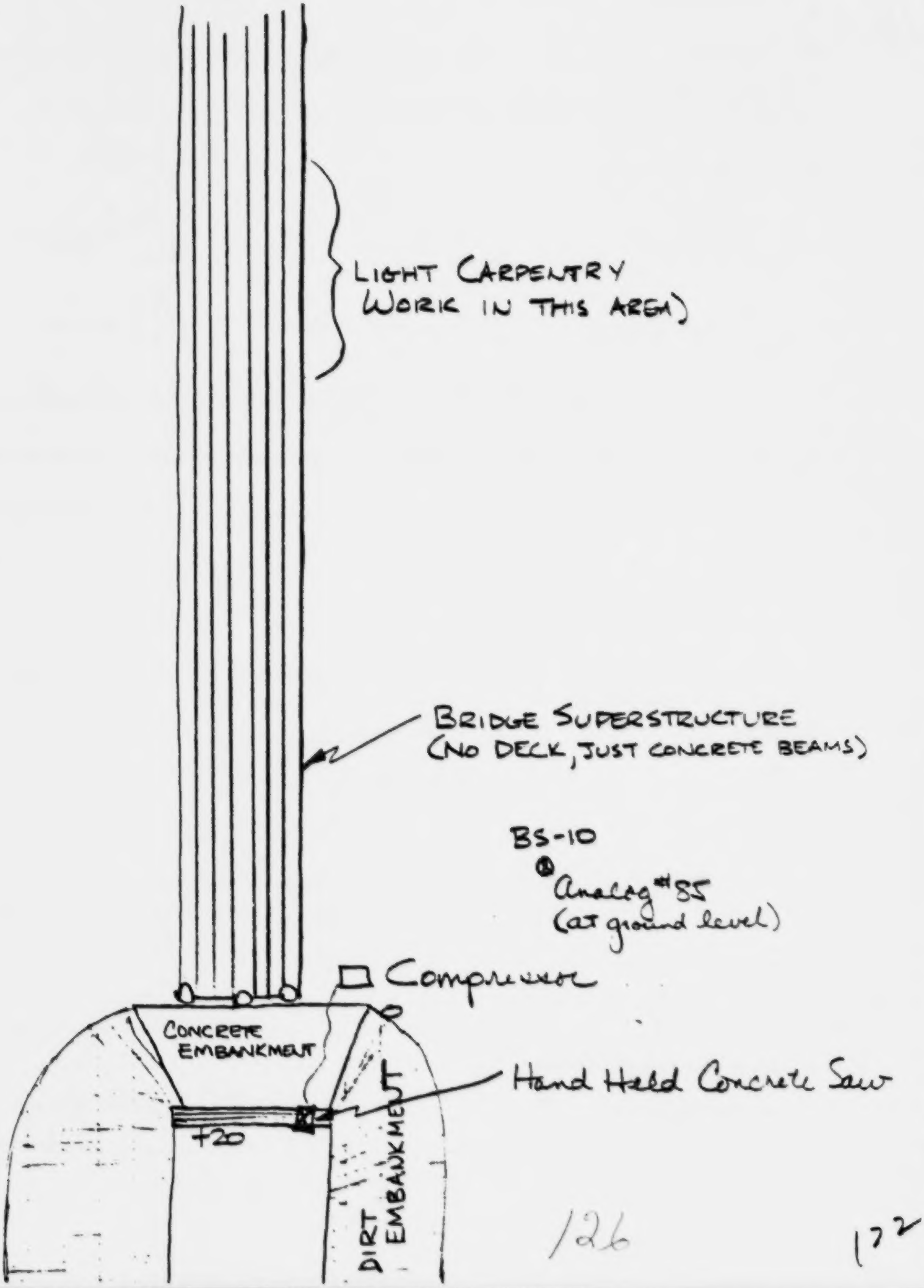
SITE LOCATION: Bridge Site

SEL

Sample	Location	Date	Equipment	L_{max} @ ___ ft.	L_{max} @ ___ ft.	L_{max} @ ___ ft.
85		1-28	CONCRETE SAW @ 100' w/ COMPRESSOR @ 80'		79	

125

DIAGRAM 1-28A
Bridge Work


LIGHT CARPENTRY (WORK IN THIS AREA)
BRIDGE SUPERSTRUCTURE (NO DECK, JUST CONCRETE BEAMS)
BS-10
Analog #85 (at ground level)
Compressor
CONCRETE EMBANKMENT
Hand Held Concrete Saw
+20
DIRT EMBANKMENT
EMBANKMENT

Measurement Site Data

Highway: I-75 **Date:** Jan 1980

Site Location: Concrete Paving and Batch Plant Operation

Type of Measurements:

☐ Community ☐ Activity ☐ Propagation

☑ Site Boundary ☐ Single Equipment ☐ Movies

Soil/Terrain Conditions: Flat, open area; hard, compacted ground around batch plant.

Machinery Description:

Maxon Side Loading Spreader
Gomaco HW-165 Paver
Finishing Truss

Ford 9000 Side Dumping Concrete Trucks
with diesel engines and concrete bed vibrators
Fiat-Allis 745 Front End Loader
Cat. 980C Front End Loader

Miscellaneous Information:

Diagrams 16A, B, C represent closed loop system involving batch plant, transporting and laying of concrete.

DATA LOG SUMMARY

HIGHWAY: I - 75

SITE LOCATION: Concrete Paving/Batch Plant

DATE: Jan 1980

Sample	Location	Date	Time	Dur.	Site Diag.	Comments	Reduced
47 - 16	P-1	1-16			1-16A	Concrete Paving Train	
-18	P-2	↓			1-16B	Concrete Truck PASSBYS	
-19	BP-1				1-16C	Concrete Batch Plant	
-20	BP-2				↓	" " "	
-21	BP-3					" " "	
-22	BP-4					" " "	

ACTIVITY NOISE MEASU

HIGHWAY: I-75

SITE LOCATION: Concrete Paving / Batc

Sample	Location	Date	Dur.	L_{eq}
47-16	P-1	1-16	:41	78.3
-19	BP-1	↓	:13	70.5
-20	BP-2		:13	80.0
-21	BP-3		:13	70.6
-22	BP-4		:06	86.2

Concrete Truck
and Vibrators

L_{max} = 87 - 90 dBA

Single Event Levels

SINGLE EQUIPMENT/PROPAGATION NOISE MEASUREMENTS

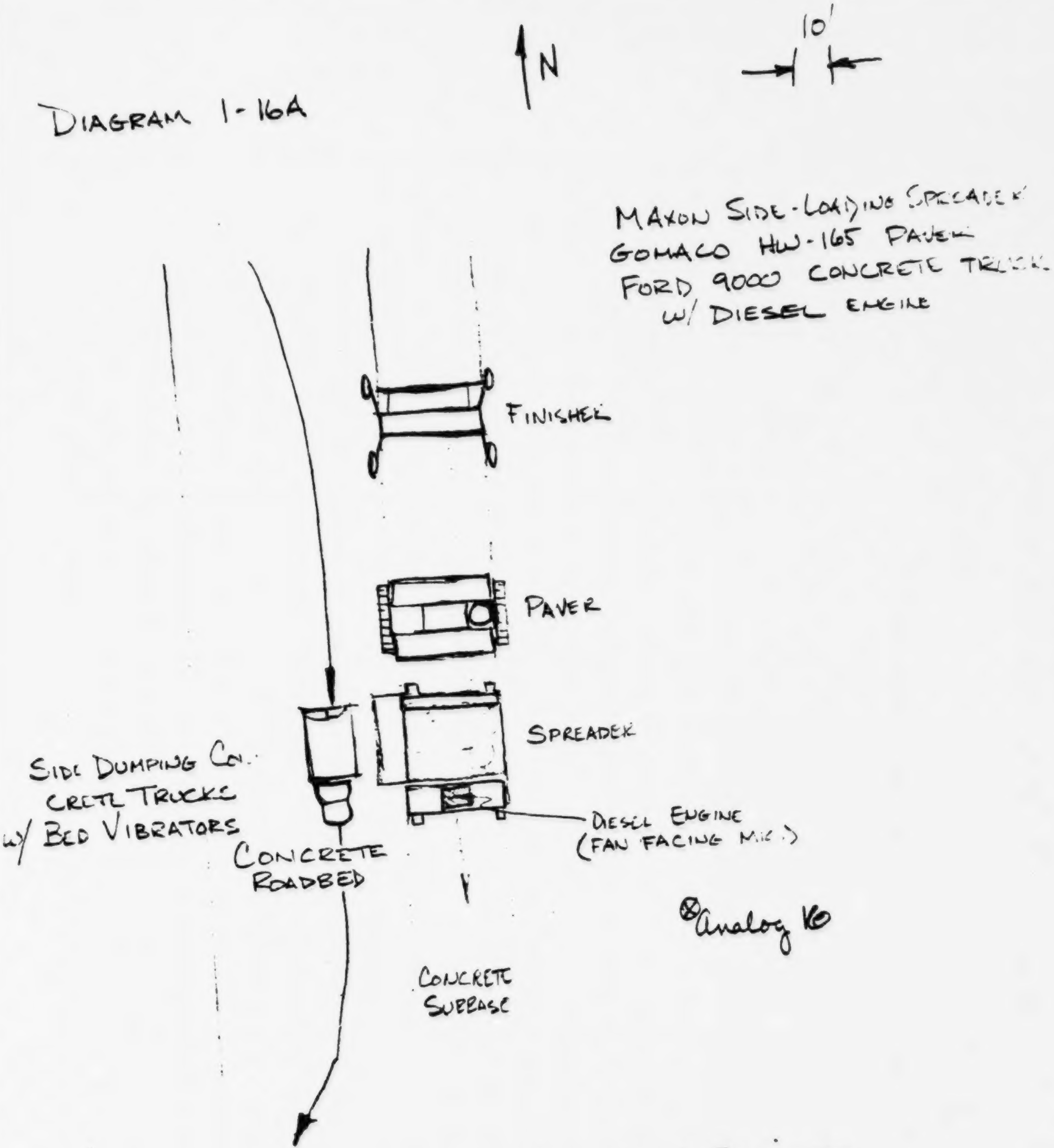
HIGHWAY: I-75

DATE: Jan 1980

SITE LOCATION: Concrete Paving/Batch Plant.

Sample	Location	Date	Equipment	L_{max} @ ___ ft.	L_{max} @ 50 ft.	L_{max} @ ___ ft.
47-18	P-2	1-16	FORD 9000 CONCRETE TRK.		76	
			"		74	
			"		76	
			"		76	

DIAGRAM 1-16A


N
10'
FINISHER
PAVER
SPREADER
SIDE DUMPING CON-CRETE TRUCKS w/ BED VIBRATORS
CONCRETE ROADBED
DIESEL ENGINE (FAN FACING MIX.)
⊗Analog 16
CONCRETE SUBBASE

MAXON SIDE-LOADING SPREADER
GOMACO HW-165 PAVER
FORD 9000 CONCRETE TRUCK
w/ DIESEL ENGINE

NOTES:
1. POURING RATE: 50 feet PER 6.5 MINUTES
2. CONCRETE TRUCKS: 5 TRUCKS IN 12 MINUTES
3. TRUCK DUMPING TIME = 1 MIN. 30 SEC

DIAGRAM 1-16B
FINISH GRADING/CONCRETE TRUCK PASSBYS

#17: CAT 12F GRADER
#18: FORD 9000 CONCRETE TRUCK

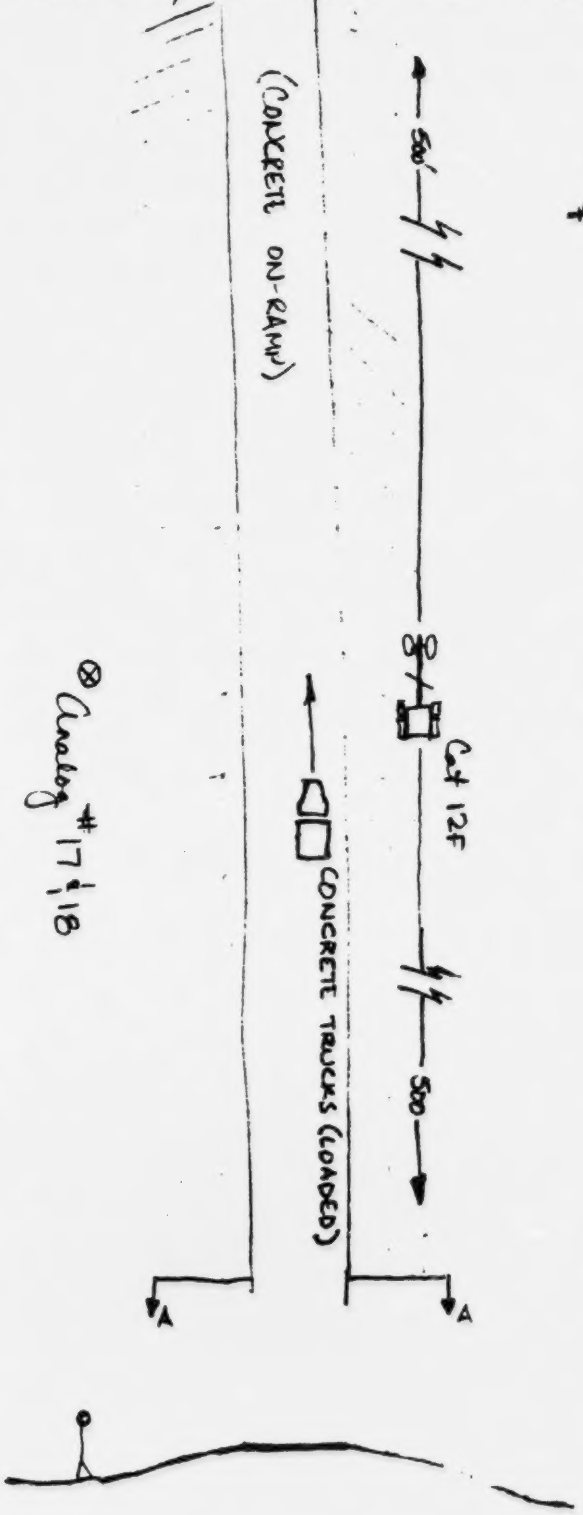
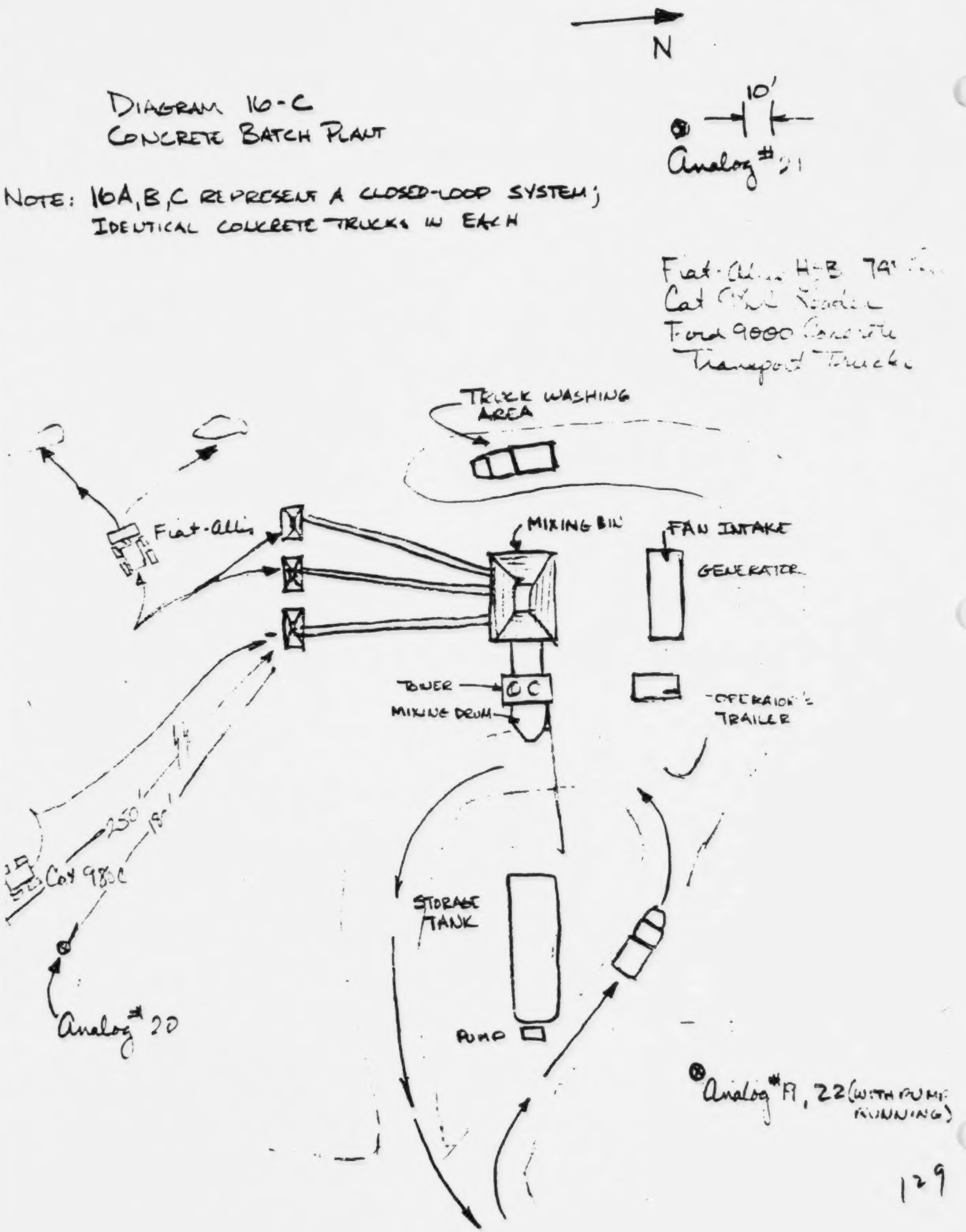

(CONCRETE ON-RAMP)
500'
Cat 12F
500
CONCRETE TRUCKS (LOADED)
⊗ Analog #17 & 18
A
A

DIAGRAM 16-C
CONCRETE BATCH PLANT

NOTE: 16A, B, C REPRESENT A CLOSED-LOOP SYSTEM;
IDENTICAL CONCRETE TRUCKS IN EACH

Fiat-Allis H-B 74' [illegible]
Cat 980C Loader
Ford 9000 Concrete
Transport Trucks


N
10'
Analog #21
TRUCK WASHING AREA
Fiat-Allis
MIXING BIN
FAN INTAKE
GENERATOR
TOWER
MIXING DRUM
OPERATOR'S TRAILER
44'
250'
180'
Cat 980C
Analog #20
STORAGE TANK
PUMP
Analog #19, 22 (WITH PUMP RUNNING)

Measurement Site Data

Highway: I-75 Date: Jan. 1980

Site Location: Single Equipment - Cat 966C Front End Loader IMI's

Type of Measurements:

☐ Community ☐ Activity ☐ Propagation

☐ Site Boundary ☑ Single Equipment ☐ Movies

Soil/Terrain Conditions: Flat. Large stockpile of dirt just beyond loader

Machinery Description:

Miscellaneous Information:

DATA LOG SUMMARY

HIGHWAY: I-75

DATE: Jan 1980

SITE LOCATION: Single Equip. - Cat 966C

Sample	Location	Date	Time	Dur.	Site Diag.	Comments	Reduced
47-27	E-1	1-17			1-17E	Cat. 966C F.E. Loader IMI's @ 50'	

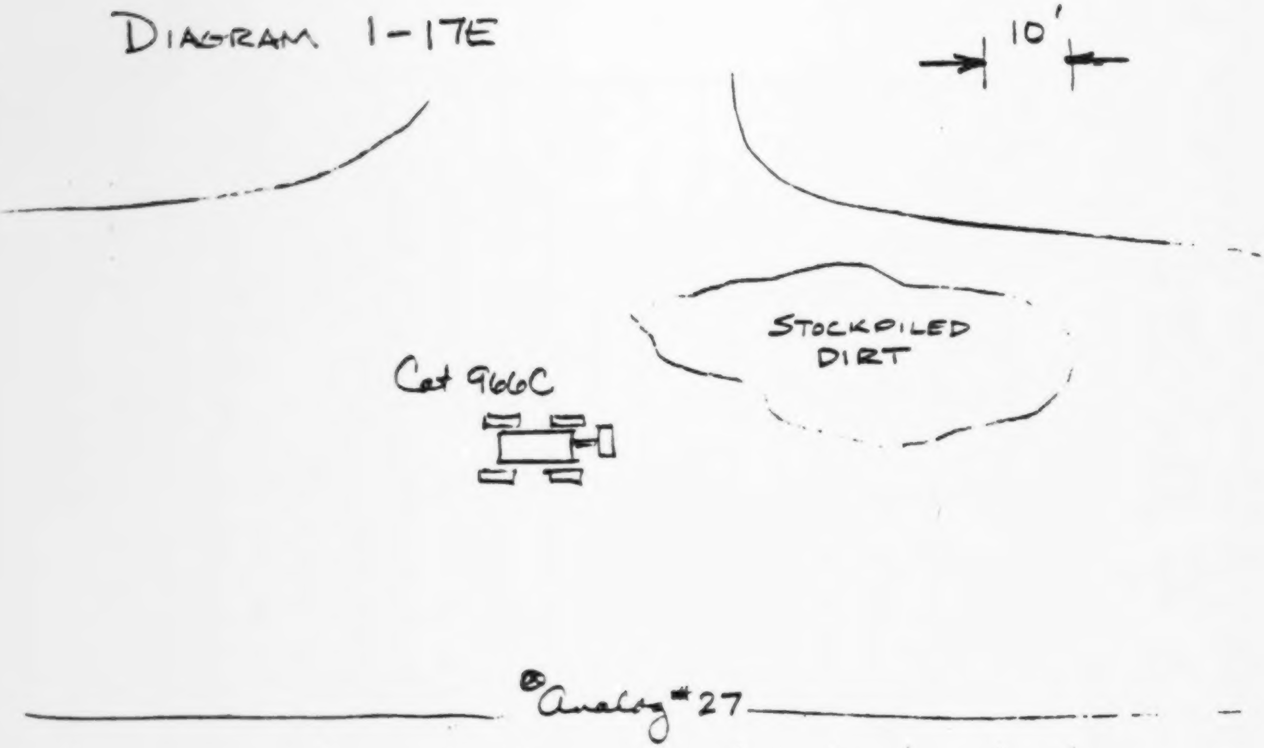
SINGLE EQUIPMENT/PROPAGATION NOISE MEASUREMENTS

HIGHWAY: I-75 DATE: Jan 1980

SITE LOCATION: Cat 966C F.E. Loader

Sample	Location	Date	Equipment	L_{max} @ ___ ft.	L_{max} @ 50 ft.	L_{max} @ ___ ft.
47-27	E-1	1-17	Cat 966C Loader		77	

DIAGRAM 1-17E


10'
STOCKPILED DIRT
Cat 966C
©Analog #27

Measurement Site Data

Highway: I-75

Date: Jan. 1980

Site Location: Single Equipment - Front End Loader Loading Stockpiled Mat'l.

Type of Measurements:

☐ Community ☑ Activity ☐ Propagation

☐ Site Boundary ☑ Single Equipment ☐ Movies

Soil/Terrain Conditions: Flat terrain; stockpile approximately 6-8 feet in height.

Machinery Description:

1 Cat 950 Front End Loader

Miscellaneous Information:

This is same 950 Loader that was measured at Earthwork Site V. See Sample 47-8 for IMI values.

DATA LOG SUMMARY

HIGHWAY: I-75

DATE: Jan. 1980

SITE LOCATION: Single Equip. - F.E. Loader

Sample	Location	Date	Time	Dur.	Site Diag.	Comments	Reduced
A7 - 24	E-2	1-17			1-17B	Cat. 950, Loading Op. w/ movies	

ACTIVITY NOISE MEASUREMENTS

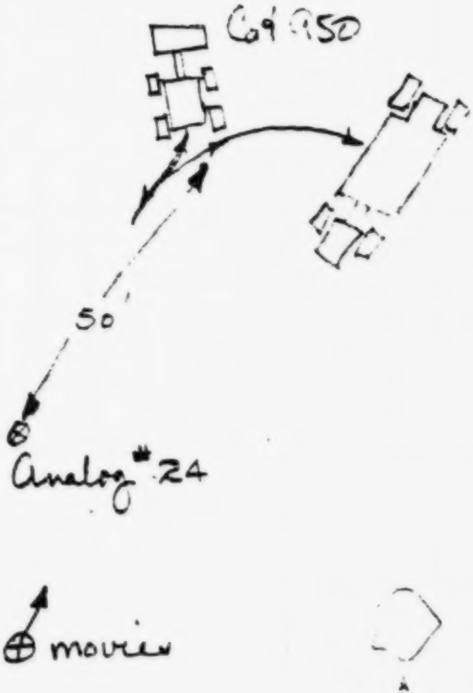
HIGHWAY: I-75

DATE: Jan 1980

SITE LOCATION: Single Equip. - F E Loader

Sample	Location	Date	Dur.	L_{eq}	L_{99}	L_{90}	L_{50}	L_{10}	L_1
47-24	E-2	1-17	:13	73.9	63	68	73	76	79

DIAGRAM 1-17B
LOADER (w/ MOVIES)


Cat 950
50'
Analog #24
⊕ movie

Measurement Site Data

Highway: I-75

Date: Jan 1980

Site Location: Single Equipment IMI Measurements on Miscellaneous Machinery

Type of Measurements:

☐ Community ☐ Activity ☐ Propagation

☐ Site Boundary ☑ Single Equipment ☐ Movies

Soil/Terrain Conditions: Flat, compacted dirt.

Machinery Description:

1 Cat 631B Scraper with straight stack
(Scraper appeared to be at least 10 years old)

1 Cat 12G Grader with muffler

Miscellaneous Information:

DATA LOG SUMMARY

HIGHWAY: I-75

DATE: Jan 1980

SITE LOCATION: Single Equipment

Sample	Location	Date	Time	Dur.	Site Diag.	Comments	Reduced
47-9	E-3	1-15			1-15H	Scraper IMI's	
-10	E-4	1-15			1-15I	Grader IMI's	

SINGLE EQUIPMENT/PROPAGATION NOISE MEASUREMENTS

HIGHWAY: I-75

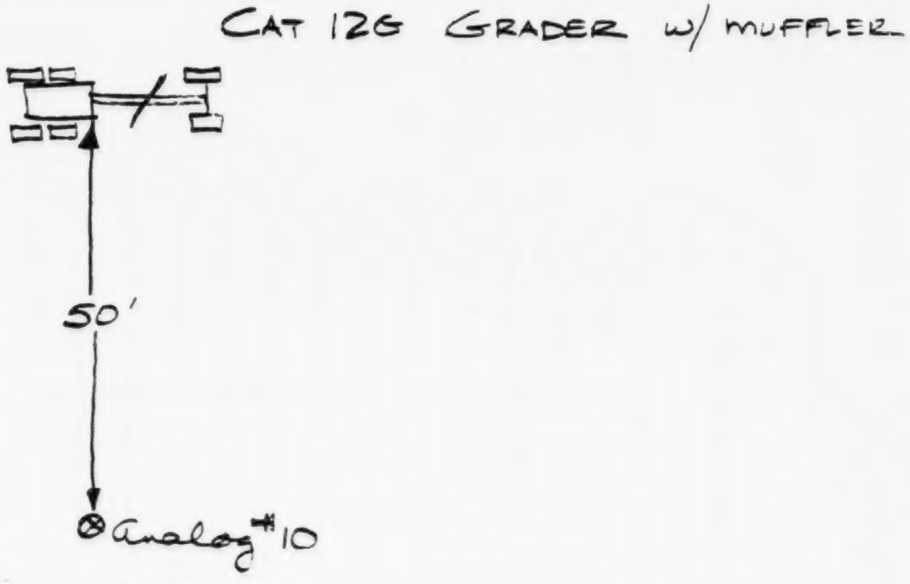
DATE: Jan 1980

SITE LOCATION: ____________

Sample	Location	Date	Equipment	L_{max} @ ___ ft.	L_{max} @ 50 ft.	L_{max} @ ___ ft.
47-9	E-3	1-15	Cat 631B Scraper		96	
-10	E-4	1-15	Cat 12G Grader		82	

DIAGRAM 1-15I

(RIGHT-OF-WAY)
FLAT, COMPATED DIRT


CAT 12G GRADER w/ MUFFLER
50'
Analog #10

Measurement Site Data

Highway: I-75

Date: JAN 1980

Site Location: Single Equipment / Finish Grading

Type of Measurements:

☐ Community
☑ Activity
☐ Propagation
☐ Site Boundary
☑ Single Equipment
☐ Movies

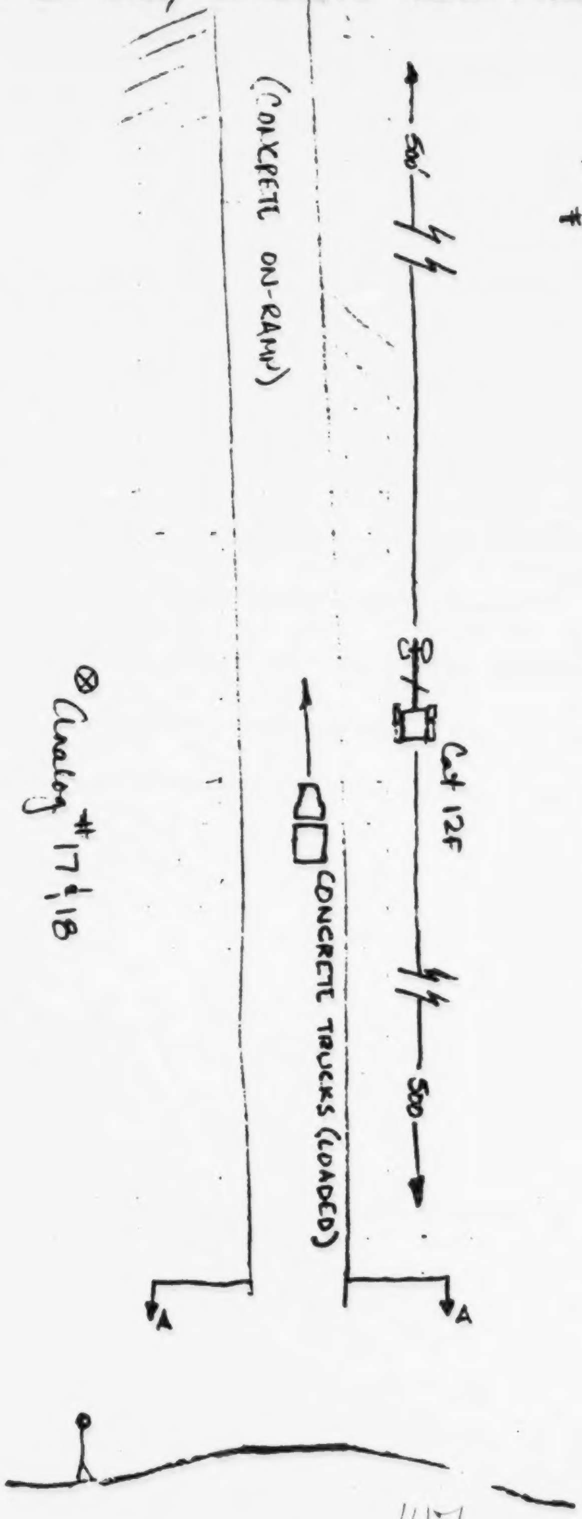
Soil/Terrain Conditions:

Machinery Description:
1 Cat 12F Grader

Miscellaneous Information:

DIAGRAM 1-16B
FINISH GRADING / CONCRETE TRUCK PASSBYS

#17: CAT 12F GRADER
#18: FORD 9000 CONCRETE TRUCKS


(CONCRETE ON-RAMP)
500'
Cat 12F
CONCRETE TRUCKS (LOADED)
500
⊗ Grading #17 & 18
A
A

DATA LOG SUMMARY

HIGHWAY: I-75

DATE: JAN 1980

SITE LOCATION: Single Equipment

Sample	Location	Date	Time	Dur.	Site Diag.	Comments	Reduced
47-17	E-5	1-16	9:00	:08	1-16B	Finish Grading	

ACTIVITY NOISE MEASUREMENTS

HIGHWAY: I-75

DATE: JAN 1980

SITE LOCATION: Single Equipment

Sample	Location	Date	Dur.	L_{eq}	L_{99}	L_{90}	L_{50}	L_{10}	L_1
47-17	E-5	1-16	:08	68.2	60	61	65	72	75

Measurement Site Data

Highway: I-75

Date: Jan 1980

Site Location: Single Equipment - Crane with Dragline Bucket, Excavating Dirt

Type of Measurements:

☐ Community ☐ Activity ☐ Propagation

☐ Site Boundary ☐ Single Equipment ☐ Movies

Soil/Terrain Conditions: Flat, compacted dirt between microphone and crane. Crane working next to steep embankment which dropped off into deep borrow pit.

Machinery Description:

1 American 797 Crane with Dragline Bucket (Crane single exhaust with muffler).

Miscellaneous Information:

DATA LOG SUMMARY

HIGHWAY: I-75

DATE: Jan. 1980

SITE LOCATION: Single Equipment

Sample	Location	Date	Time	Dur.	Site Diag.	Comments	Reduced
47-65	E-6				1-22D	Crane	

ACTIVITY NOISE MEASUREMENTS

HIGHWAY: I - 75

DATE: Jan 1980

SITE LOCATION: Single Equipment

Sample	Location	Date	Dur.	L_{eq}	L_{99}	L_{90}	L_{50}	L_{10}	L_{1}
65	E-6		:06	65.1	59	60	65	68	70

SINGLE EQUIPMENT/PROPAGATION NOISE MEASUREMENTS

HIGHWAY: I-75

DATE: Jan 1980

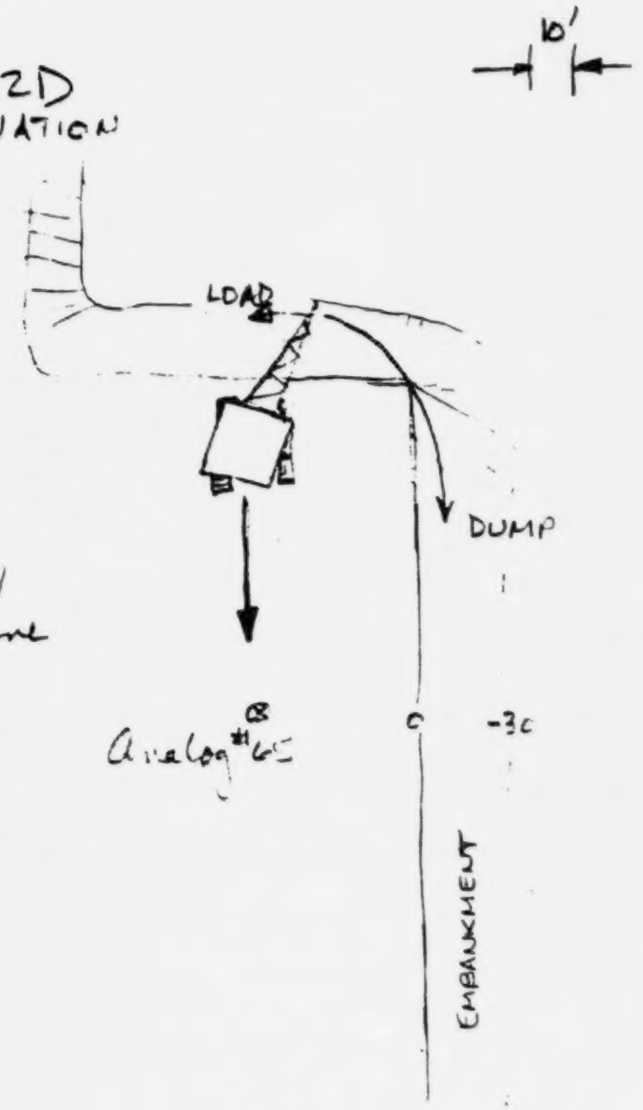
SITE LOCATION: Single Equipment

SEL

Sample	Location	Date	Equipment	L_{max} @ __ ft.	L_{max} @ 50 ft.	L_{max} @ __ ft.
65 .	E-6		American 797 Crane		73	

Max Level of cycle operation

DIAGRAM 1-22D
BORROW EXCAVATION


10'
LOAD
DUMP
-30
EMBANKMENT
Analog #65

American 797
Crane w/ dragline

Measurement Site Data

Highway: I-75

Date: Jan 1980

Site Location: Single Equipment - Dump Truck Pavilion

Type of Measurements:

☐ Community ☐ Activity ☐ Propagation

☐ Site Boundary ☑ Single Equipment ☐ Movies

Soil/Terrain Conditions: Measurements taken along completed but unopened section of I-75 which dump trucks were using a haul road.

Machinery Description:

Mack Single Chassis 10-Wheel Dump Trucks

Mack Tractor-Semi Dump Trucks

Miscellaneous Information: Vehicles were traveling at 35 - 50 mph.

Single Event Levels

SINGLE EQUIPMENT/PROPAGATION NOISE MEASUREMENTS

HIGHWAY: I-75

DATE: Jan 1980

SITE LOCATION: Single Equipment

Sample	Location	Date	Equipment	L_{max} @ ___ ft.	L_{max} @ ___ ft.	L_{max} @ ___ ft.
47-67			Mack Semi: Empty		73 @ 57'	
			Mack Semi: Loaded	(45-50mph)	83 @ 55'	
			Mack Single: Empty	(35-40 mph)	72 @ 60'	
			Mack Single: Loaded		72 @ 42'	
			Mack Semi: Loaded		74 @ 48'	
			Mack Single: Empty		70 @ 65'	

ROLL #1

Photo Log - 35 mm

Frame #	Location	Date	Time	View or Subject
1	Earthwork Site I	1-15		EW-3; Scraper Pavelys
2	↓	↓		" " "
3	↓	↓		EW-4; Looking S.E. @ Borrow Pit
4	↓	↓		EW-4; Looking east @ Borrow Pit
5	Earthwork Site VII	↓		EW-30; Cat 12G Grader
6	↓	↓		EW-30; Cat 12F Grader
7	↓	↓		EW-30; Cat 950 Loader
8	Earthwork Site V	↓		EW-25; Debris loading op.
9	Single Equipment	↓		E-4; Cat 12G Grader, IMI
10	↓	↓		E-3; Cat 631B Scraper, IMI
11	↓	↓		" " " " "
12	–	↓		–
13	Earthwork Site V	↓		EW-28; Cat D7F Dozer
14	Clearing Site I	↓		CS-7; Looking east
15	↓	↓		CS-7; Looking east at Terex Loader
16	Concrete Paving/Batch Plant	1-16		P-1; Looking west at Paver
17	↓	↓		P-1; Looking N.E.
18	↓	↓		P-1; Looking west
19	Single Equipment	↓		E-5; Finishing grading
20	Concrete Paving/Batch Plant	↓		P-2; Ford 9000 Concrete Trucks
21	↓	↓		BP-1; Looking S.W.

Roll #1

Photo Log - 35 mm

Frame #	Location	Date	Time	View or Subject
22	Concrete Paving/B.P.	1-16		BP-2; Looking N.W
23	↓	↓		BP-3; Looking S.E.
24	—			—
25	Earthwork Site I	1-17		EW-7; Looking N.W
26	↓	↓		EW-7; Looking S.W.
27	Single Equipment			E-2; Cat 950 (movies)
28	—			—
29	Earthwork Site I			EW-7; Looking west at Borrow Pit
30	Earthwork Site II			EW-9; Scraper Passing
31				EW-9; Cat. D9G Passing
32				EW-9; Cat 637 Scraper
33				EW-10; Looking north
34	Single Equipment			E-1; Cat 966C Loader
35	Earthwork Site II			EW-11; Cat 637, IMI
36	↓	↓		" " "

Roll #2

Photo Log - 35 mm

Frame #	Location	Date	Time	View or Subject
1	Earthwork Site III	1-18	1315	Mack Single Chassis Dump Truck
2	↓	↓		EW-12; Looking west
3	↓	↓		EW-13; Cat D7G, IMI
4	↓	↓		EW-15; Looking east @ roller
5	↓	↓		EW-14; Looking east
6	↓	↓		EW-16; Looking east
7	–			–
8	–			–
9	Earthwork Site IX	1-21	1030	EW-39; Scraper Passbys (Sample #44)
10	↓	↓		" " " "
11	↓	↓		EW-32; Looking south
12	↓	↓		" " "
13	↓	↓		South of EW-32, looking north
14	↓	↓		Camera location east of pit
15	↓	↓		Camera location looking east @ EW-33
16	Bridge Site II	↓		South of B-2 looking north
17	↓	↓		S.E. of B-2 looking north
18	Earthwork Site VI	↓		South of EW-29 looking north
19	Earthwork Site IV	↓		Looking S.E @ EW-19
20	↓	↓		EW-19; looking @ D7F Dozer
21	↓	↓		EW-19; looking N.E.

ROLL #2

Photo Log - 35 mm

Frame #	Location	Date	Time	View or Subject
22	Mobilization	1-21	1610	M-1; looking N.E. @ Dump Trucks
23	↓	↓		M-2; Dump Truck Payloads
24				" " " "
25	Clearing Site II	1-22	1035	CS-2; Cat D7G
26	↓			CS-2; Looking north
27				CS-3; Looking east at Terex
28				CS-4; Cat D8H
29	Earthwork Site VIII			EW-31; Autograde Grader
30	↓			EW-31; Cat 613B Scraper
31	Single Equipment			Sample #47
32	↓			" "
33				" "
34	Bridge Site III			BS-3; Concrete Saw finishing cut
35	↓			BS-3; Concrete Saw
36	Single Equipment			Dump Truck Payloads (Sample 67)

ROLL #3

Photo Log - 35 mm

Frame #	Location	Date	Time	View or Subject
1	–	1-23	1430	N/G
2	Abatement Demo.	↓		Well Point Pump; without enclosure
3	↓	↓		↓
4	↓	↓		↓
5	↓	↓		↓
6	↓	↓		↓
7	↓	↓		↓
8	↓	↓		Well Point Pump; With enclosure
9	↓	↓		↓
10	↓	↓		↓
11	↓	↓		↓
12	↓	↓		↓
13	Earthwork Site IV	1-24		EW-23; Looking south into pit
14		↓		EW-22; Looking east towards approach ramp
15	Clearing Site III	↓		CS-8; Loader & fan at fire
16		↓		3-hp fan
17		↓		" "
18		↓		CS-9; Loader at fire
19		↓		CS-10; fans near fire
20		↓		CS-11; Terex Loader
21	Earthwork Site IV	↓		Movie Camera Location (Diagram 1-24A)

ROLL #3

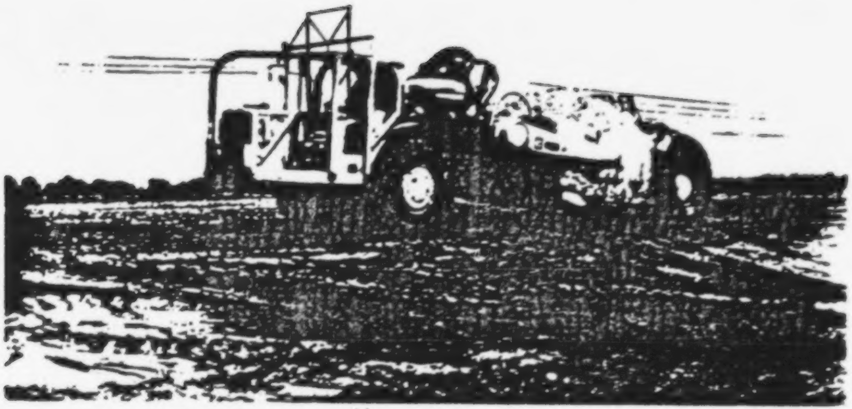
Photo Log - 35 mm

Frame #	Location	Date	Time	View or Subject
22	Earthwork Site IV	↓		EW-24; Looking north at Borrow Pit
23	Bridge Site III	1-25		BS-4; Breaking concrete w/jackhammer
24	↓	↓		" " " "
25	Bridge Site IV	1-28		BS-5; Looking S.E. at Pile Driver
26	↓	↓		East of BS-7; Looking south at Cat 235 Backhoe
27				Near BS-8; Looking north at Crane & Bucket
28				Camera location; Looking south
29				Camera location; Looking S.E.
30				BS-5; Looking S.W. @ Backhoe/Crane
31	Bridge Site V			BS-10; Concrete Saw on abutment
32	Abatement Demo.			D9 Dozer w/ new muffler
33				" " " "
34	Earthwork Site I	1-29		EW-38; Looking west @ pit
35	↓	↓		EW-35; Looking west @ loading op.
36				EW-35; " " " "

Photo Log - 35 mm

Frame #	Location	Date	Time	View or Subject

ROLL #1



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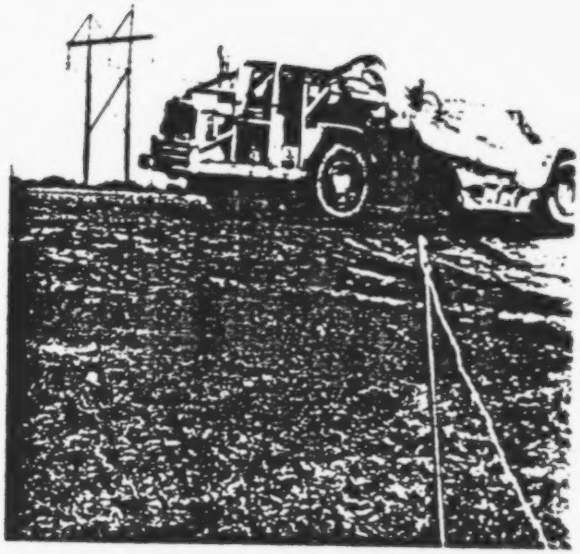

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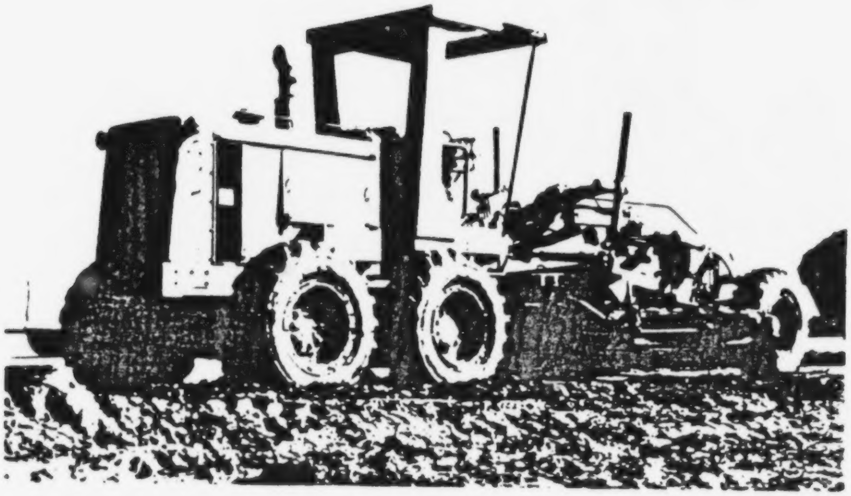
#3

#4



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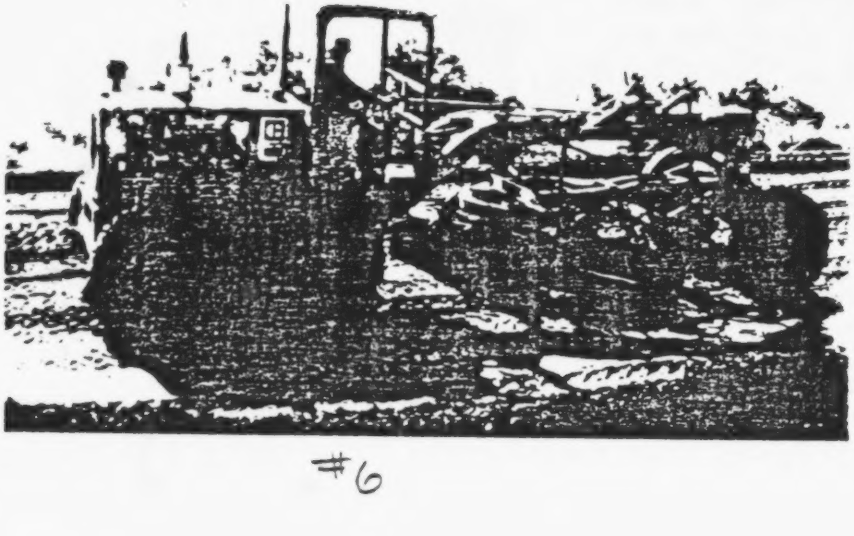

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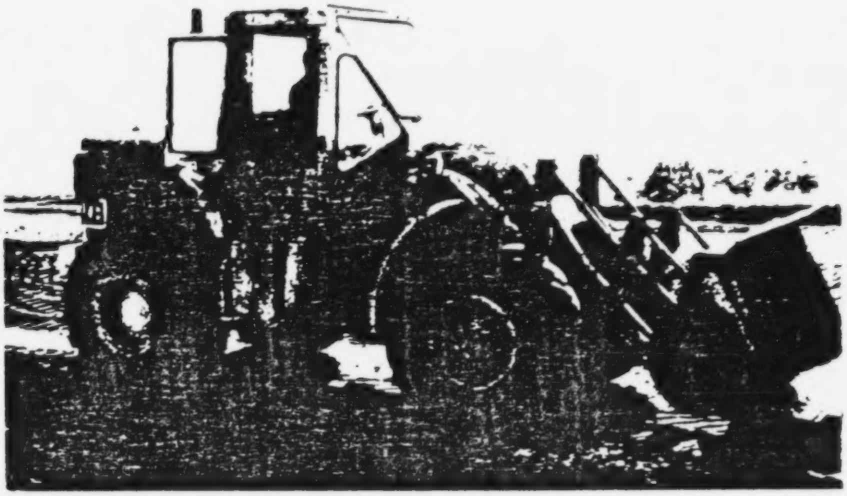
166



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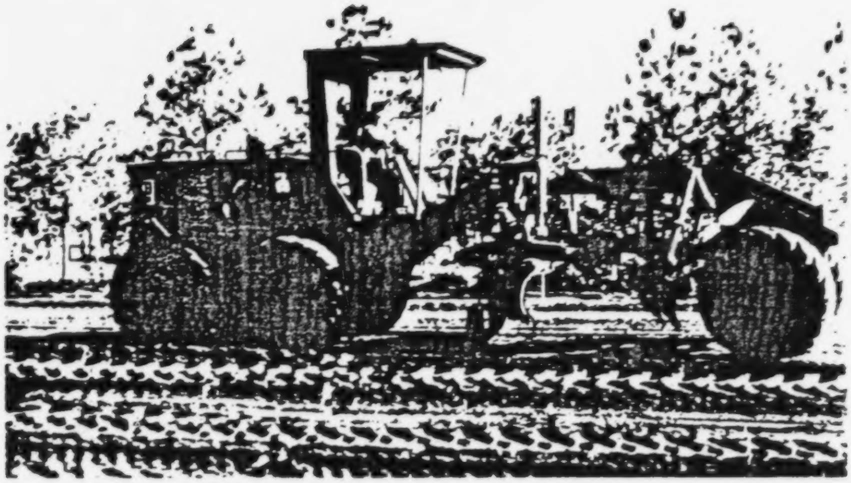

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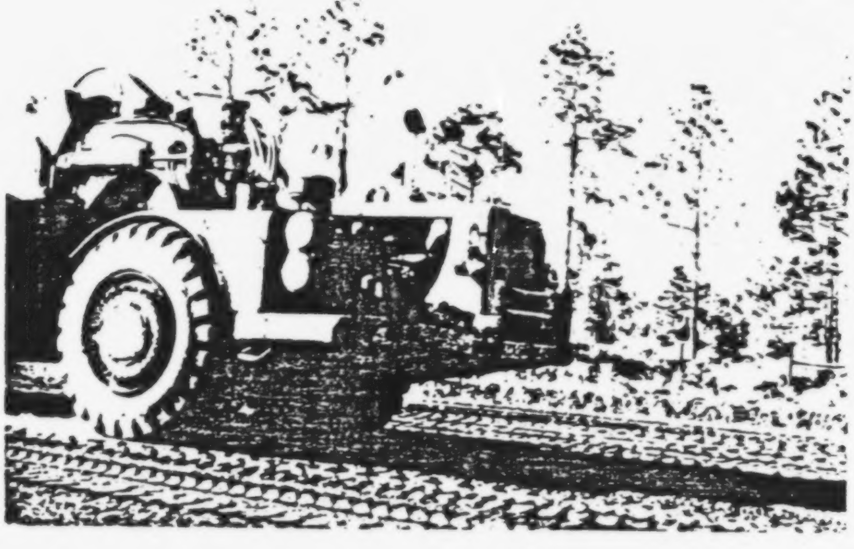

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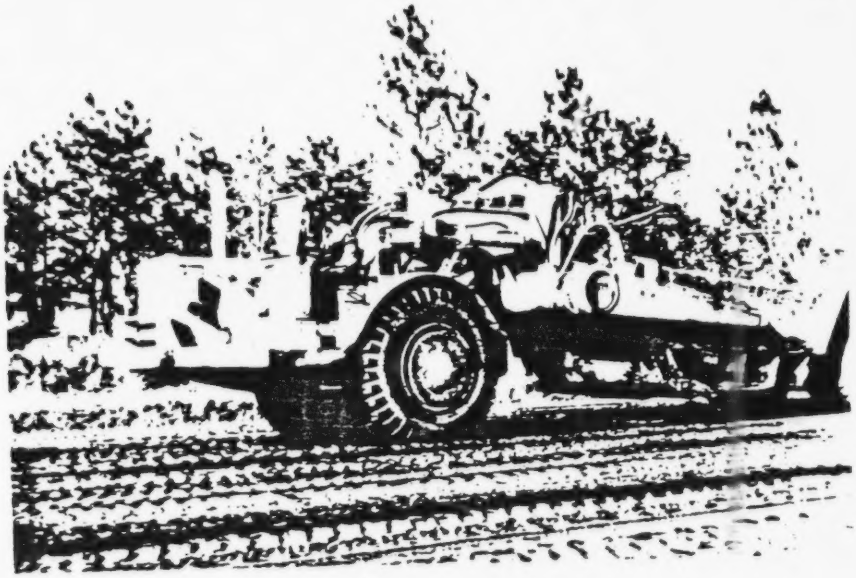
168



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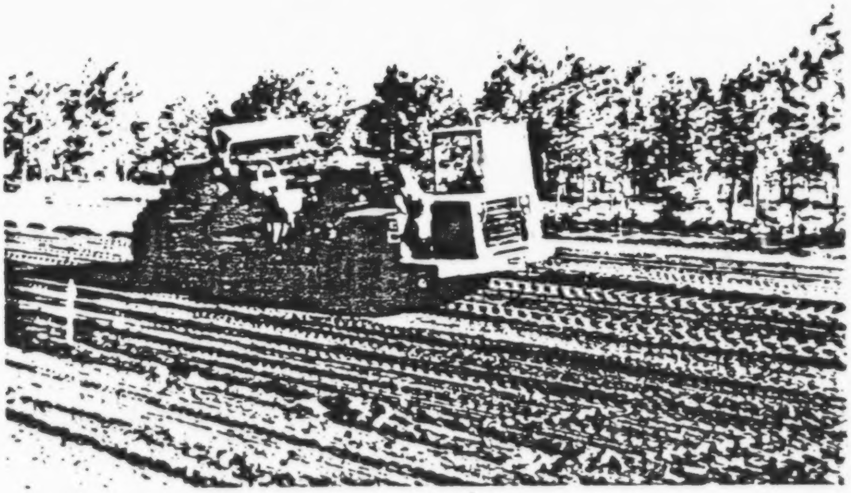

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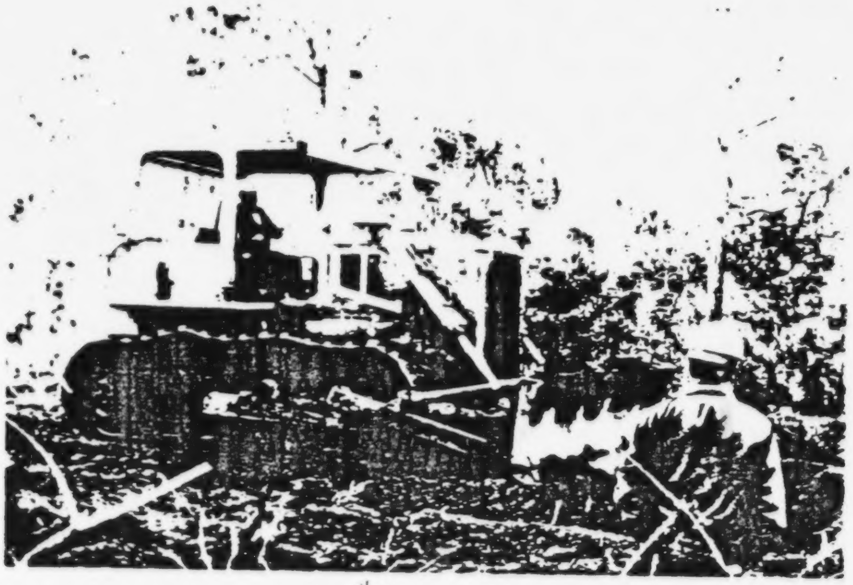

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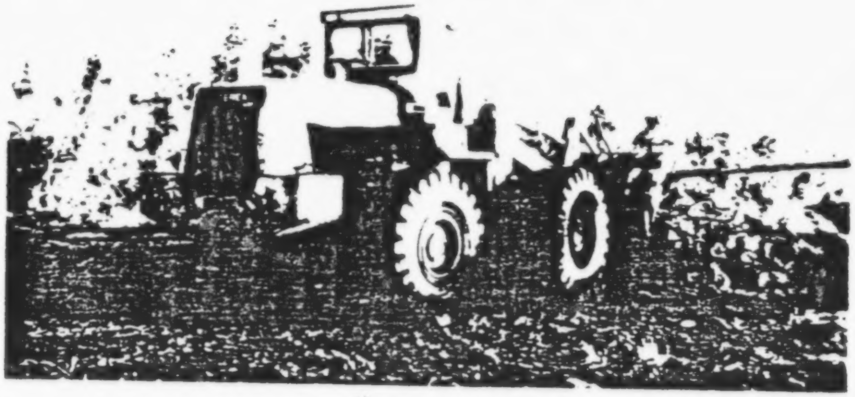

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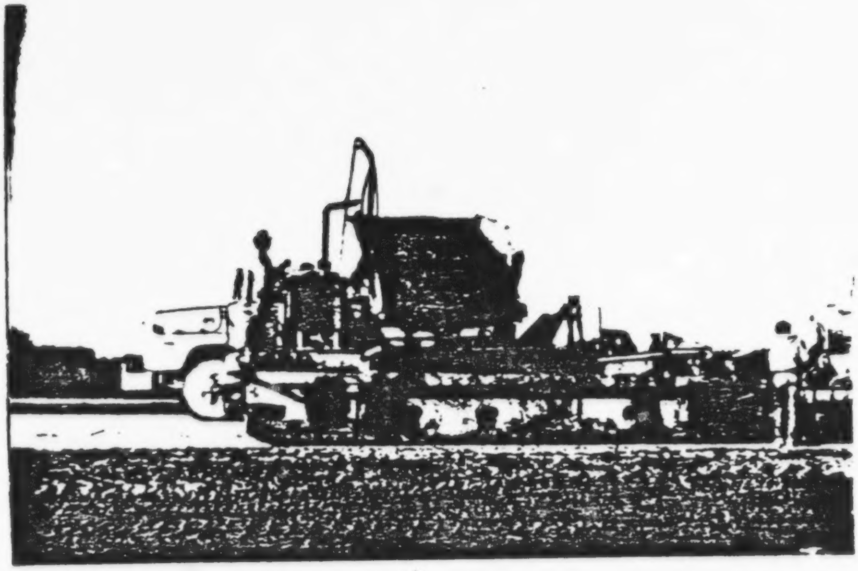

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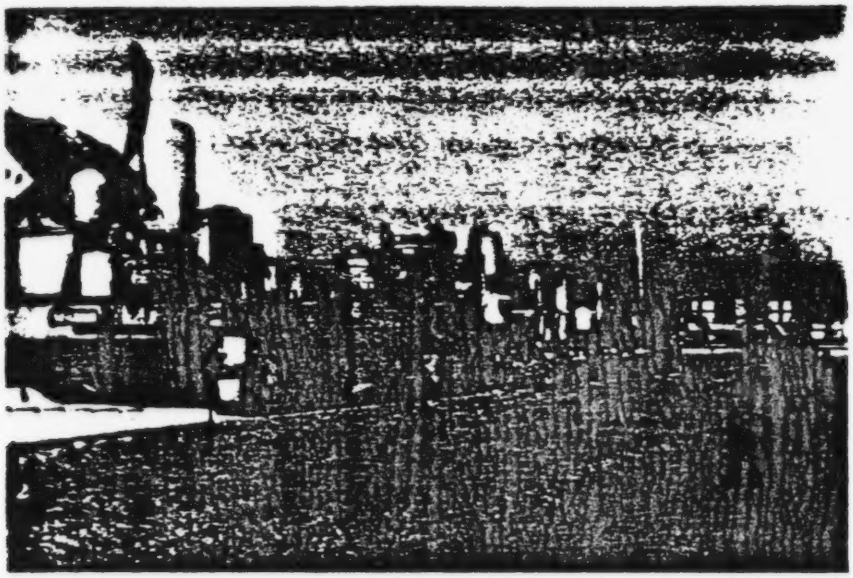

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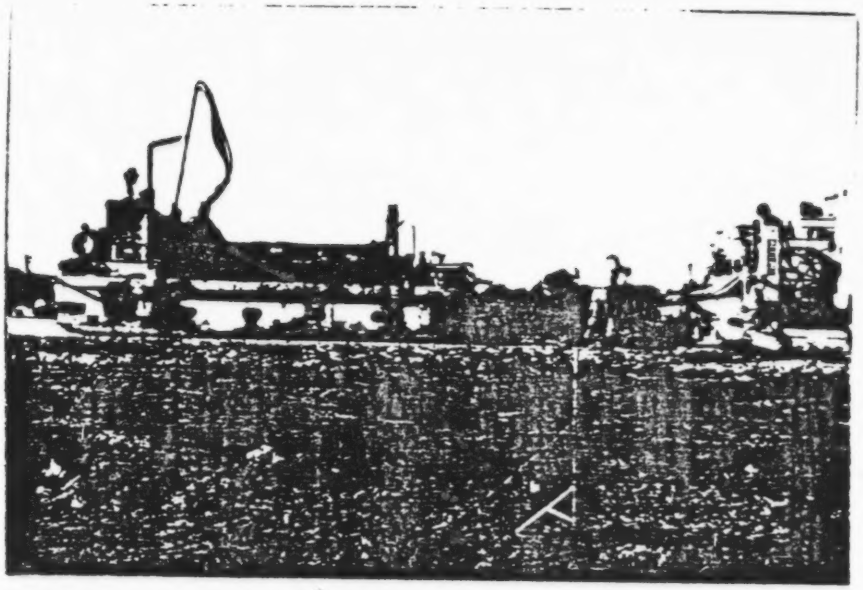

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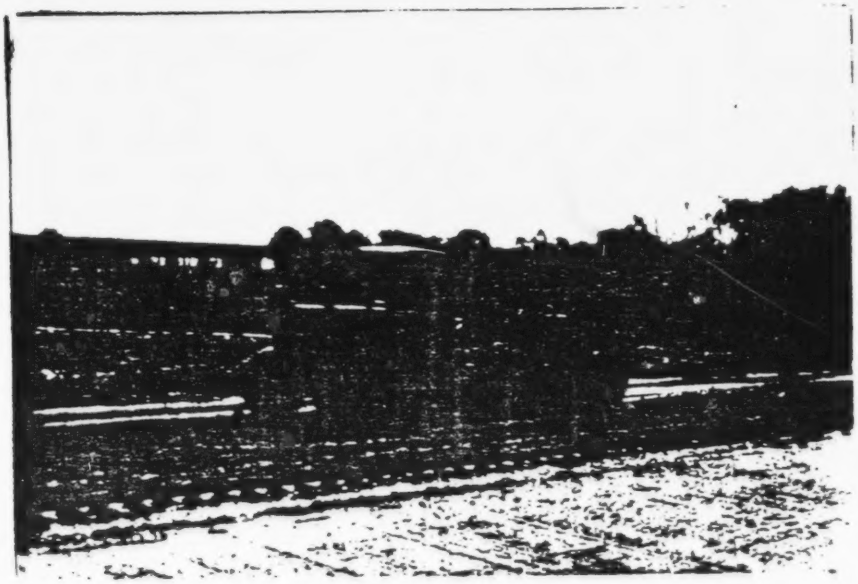

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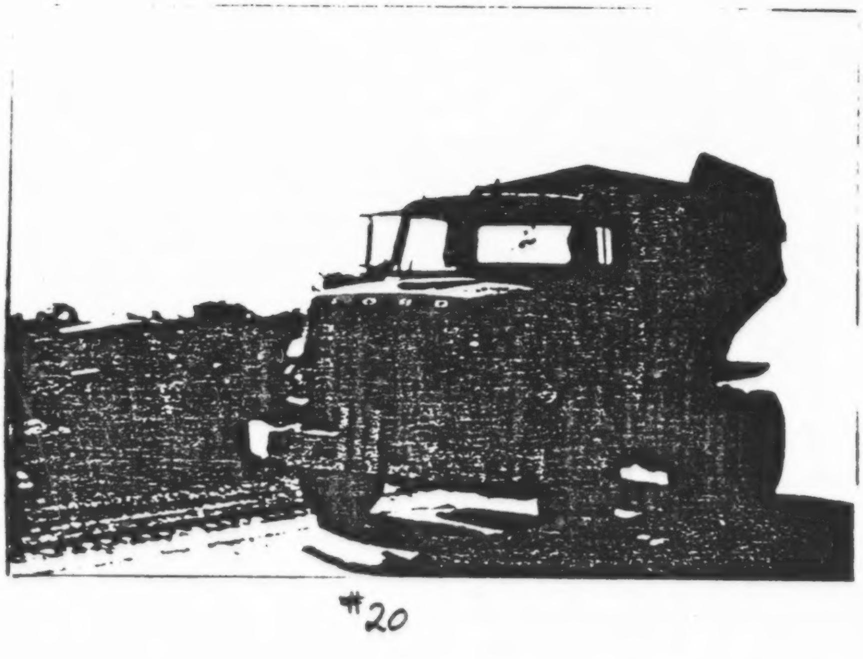

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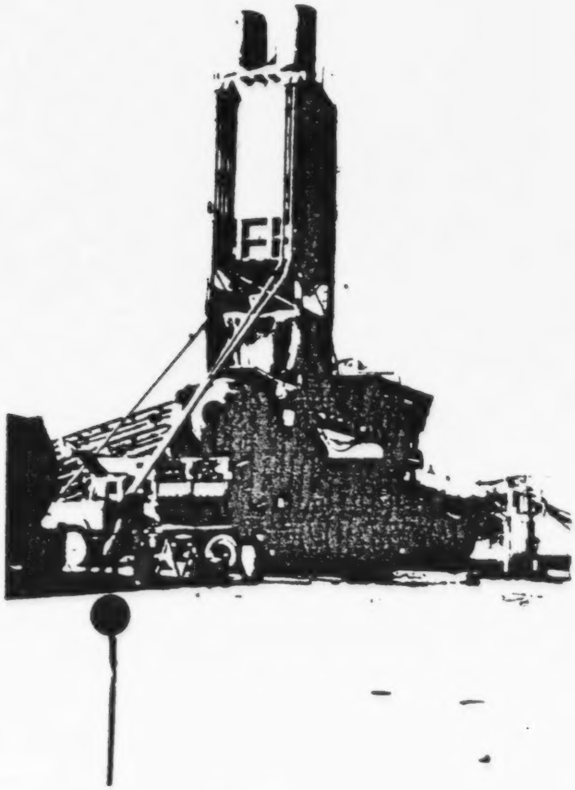

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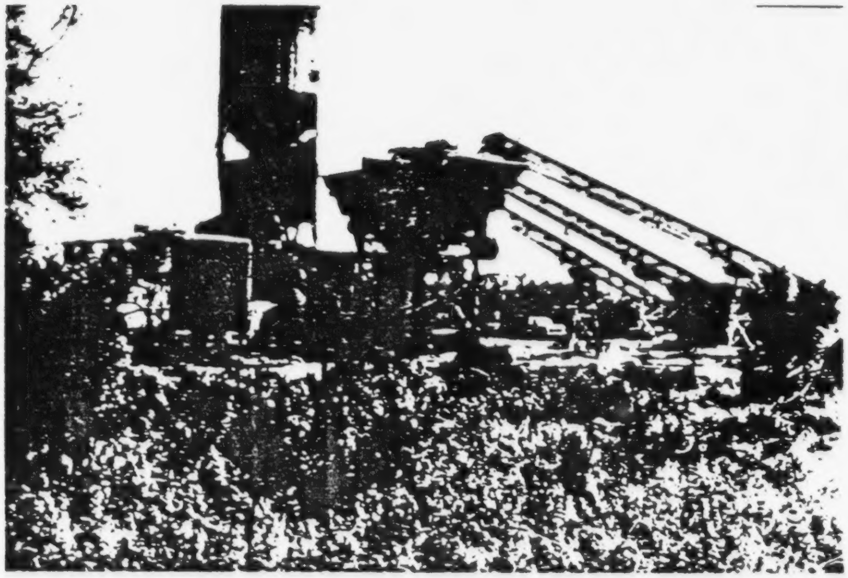

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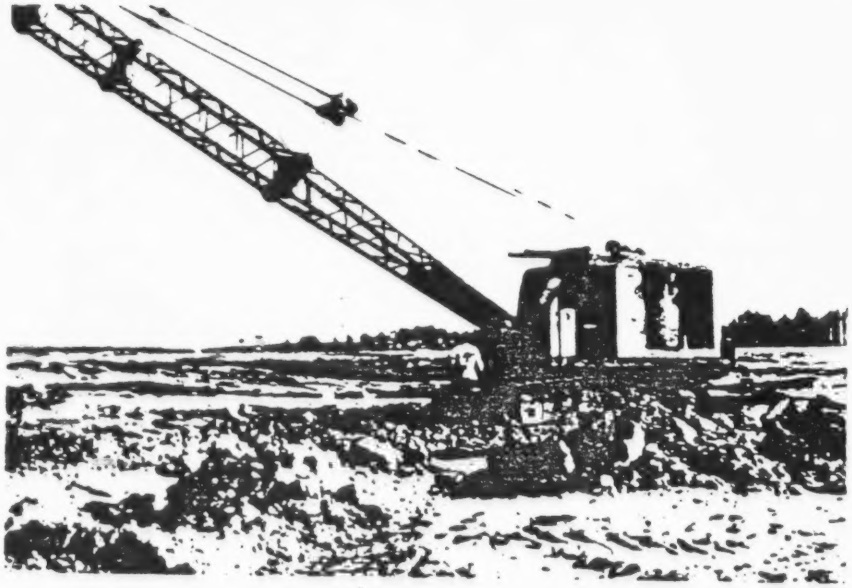

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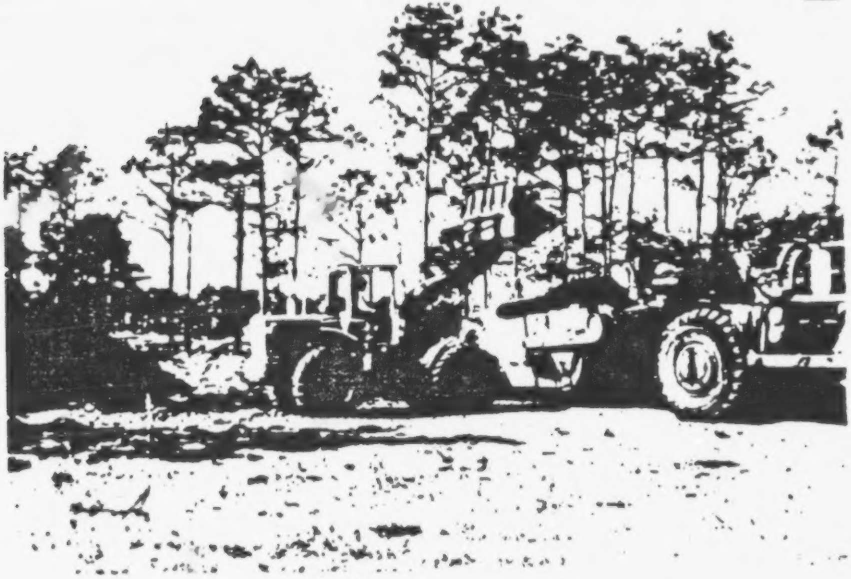

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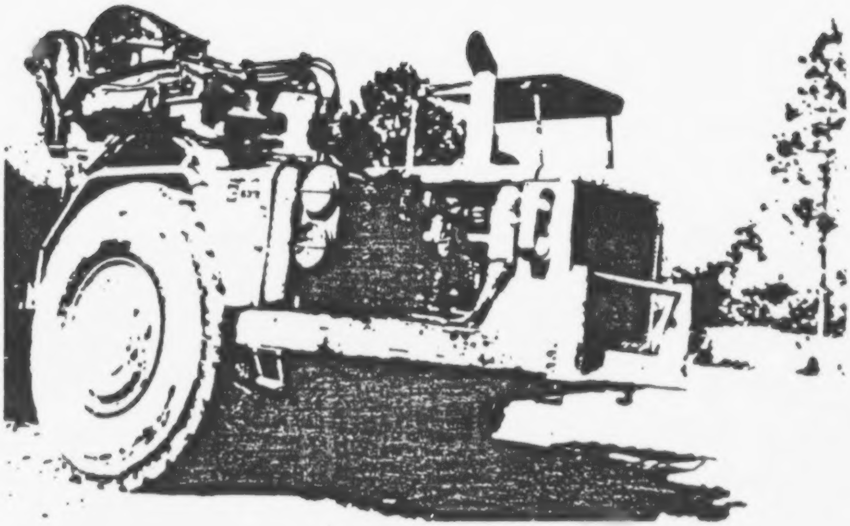

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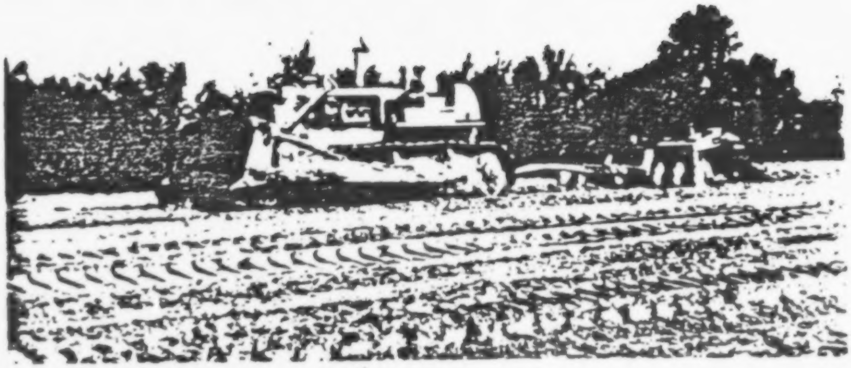

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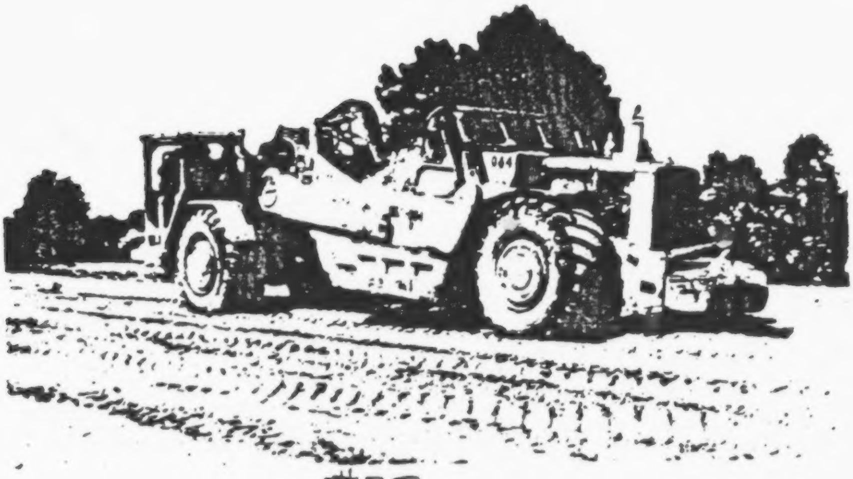

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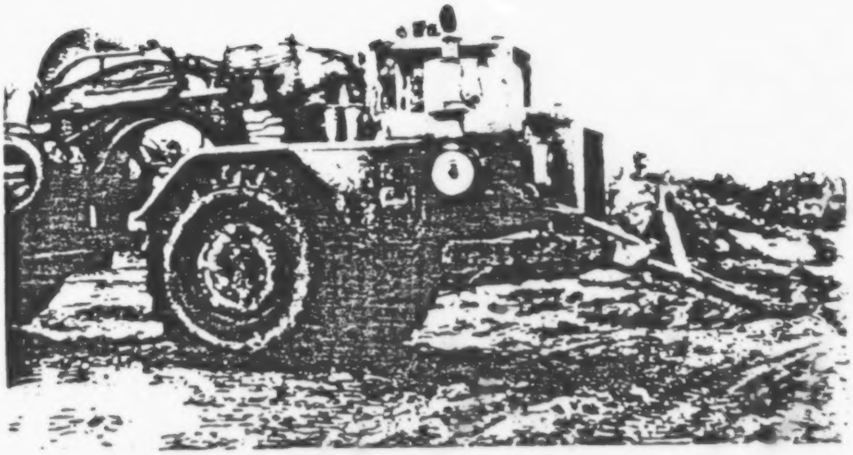

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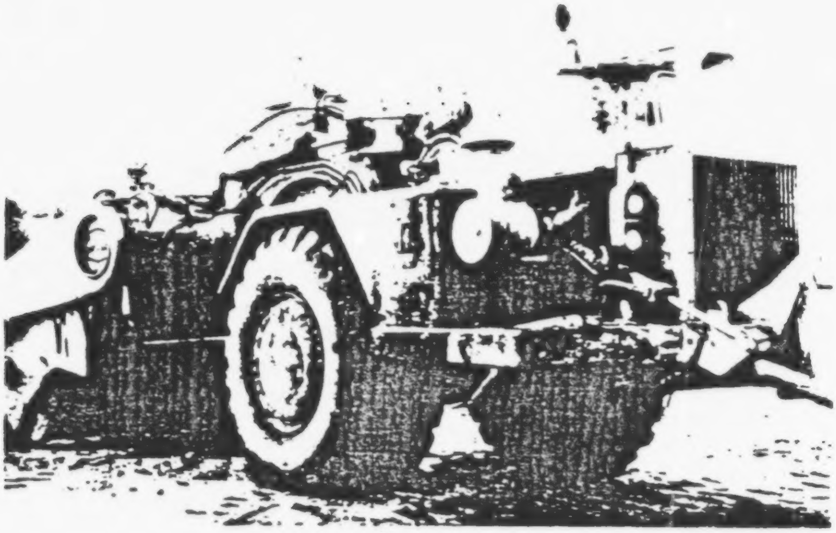

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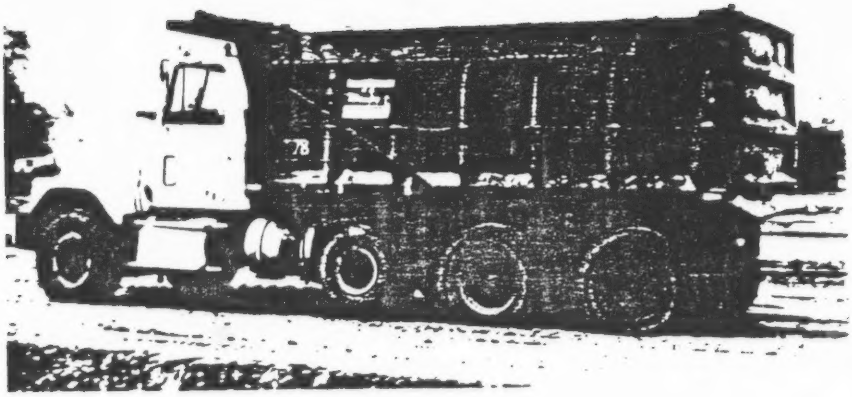
ROLL #2



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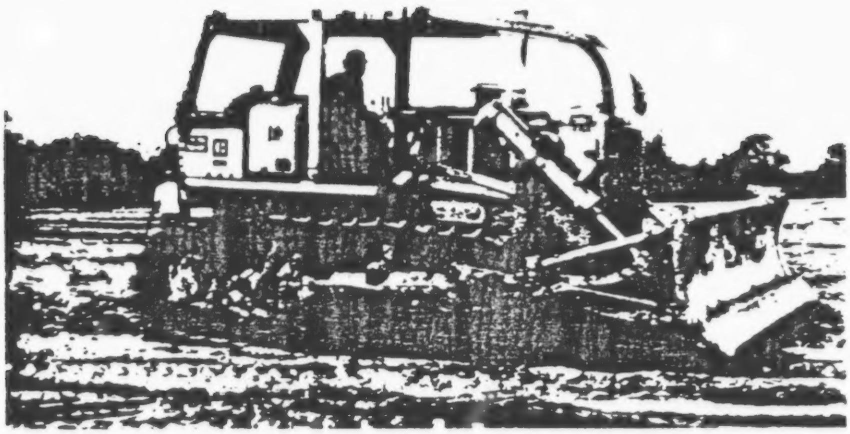

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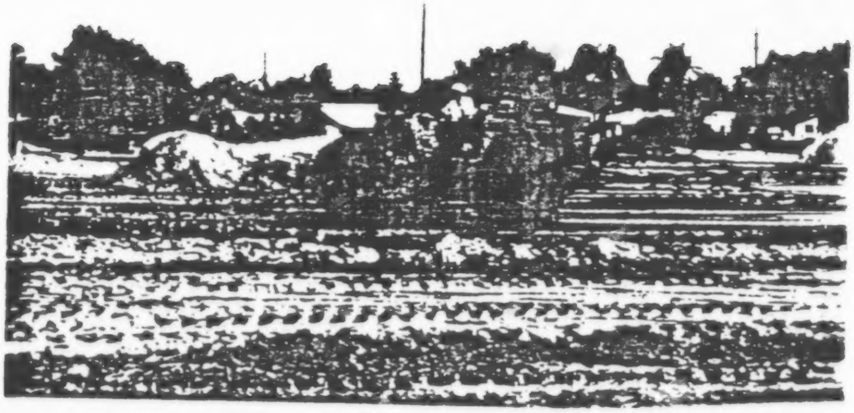

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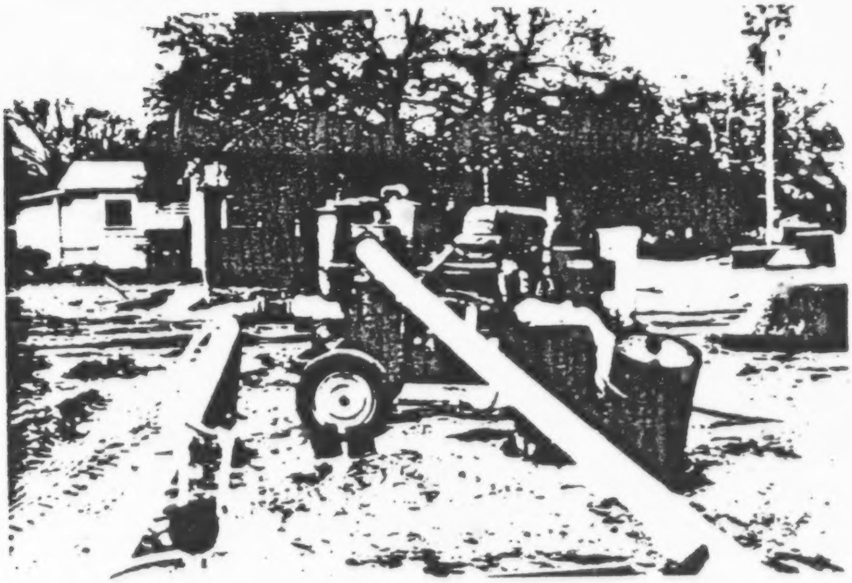

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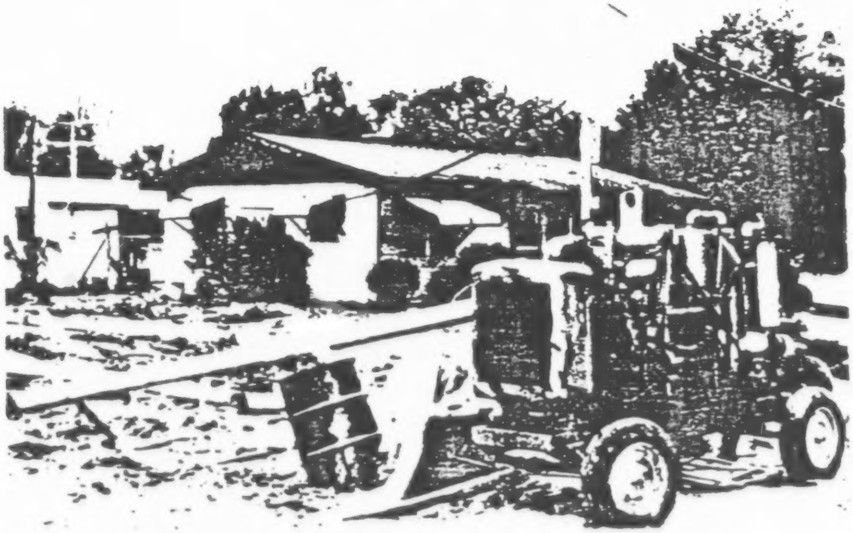

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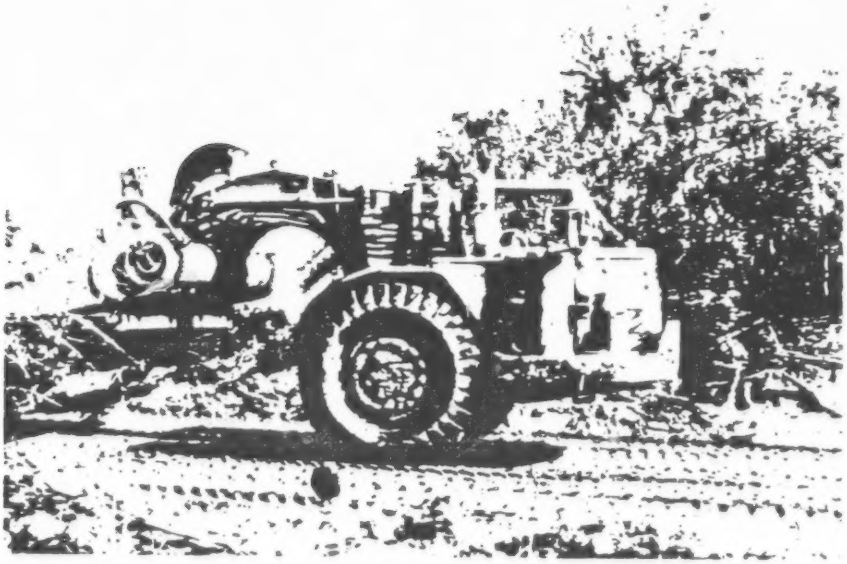

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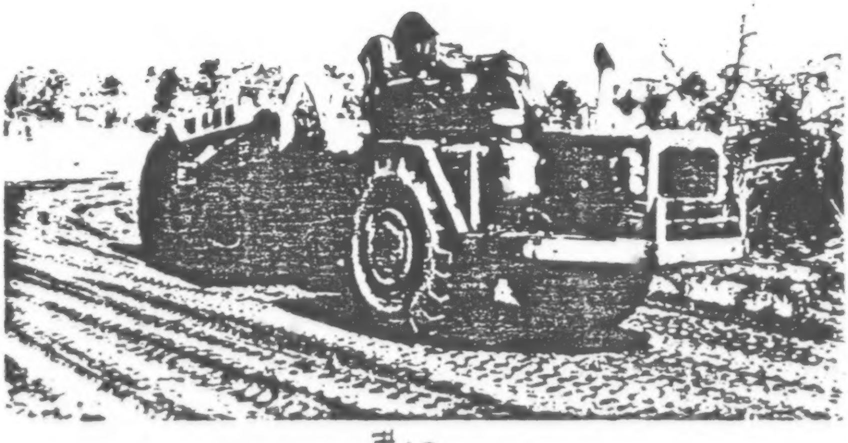

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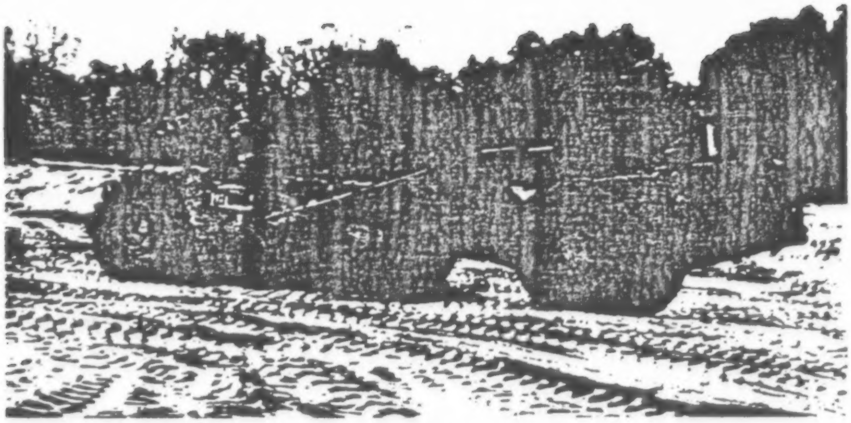

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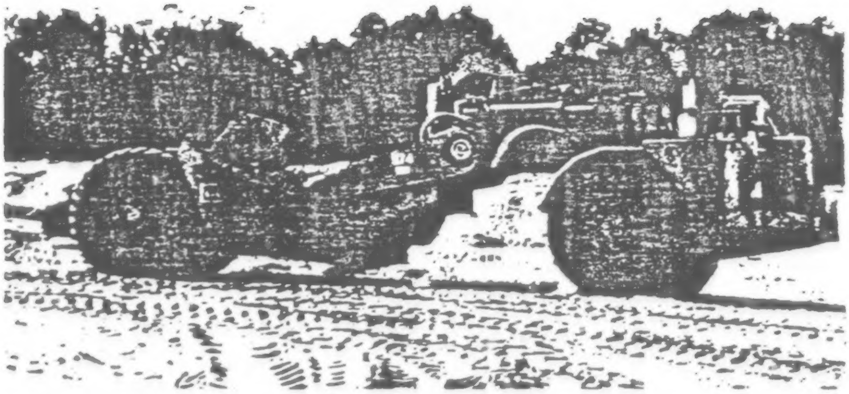

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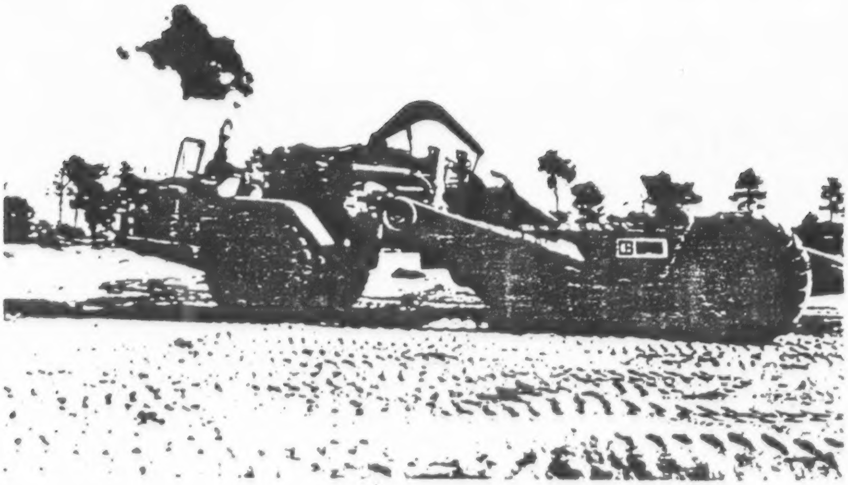

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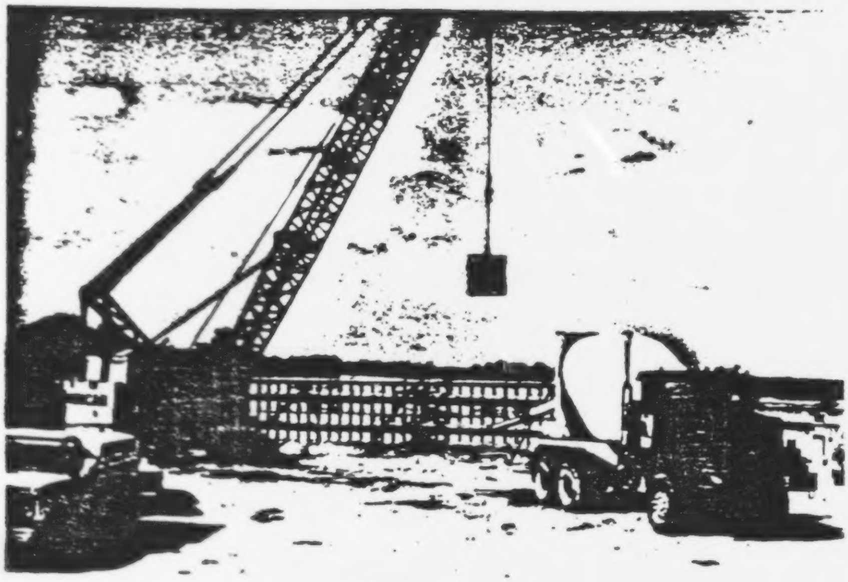

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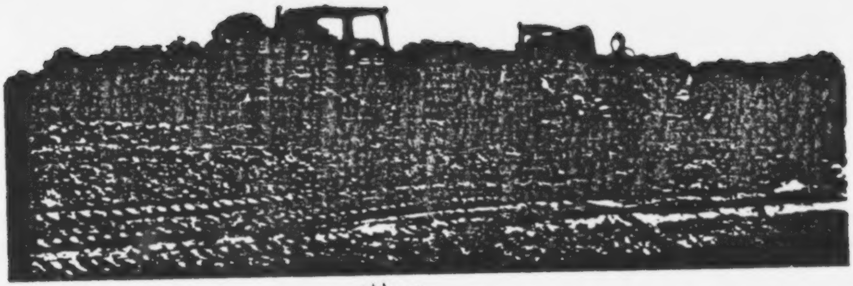

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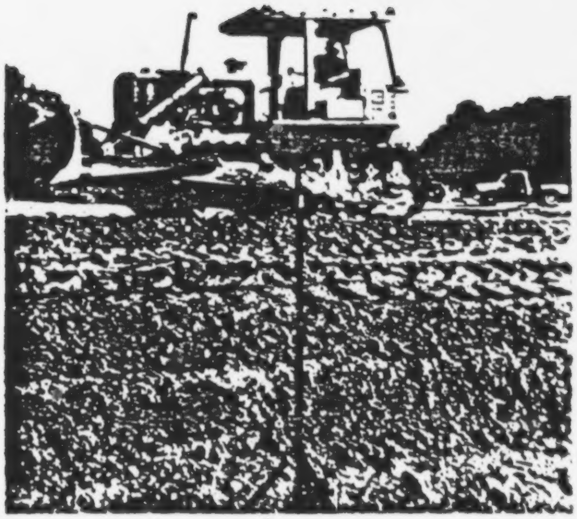

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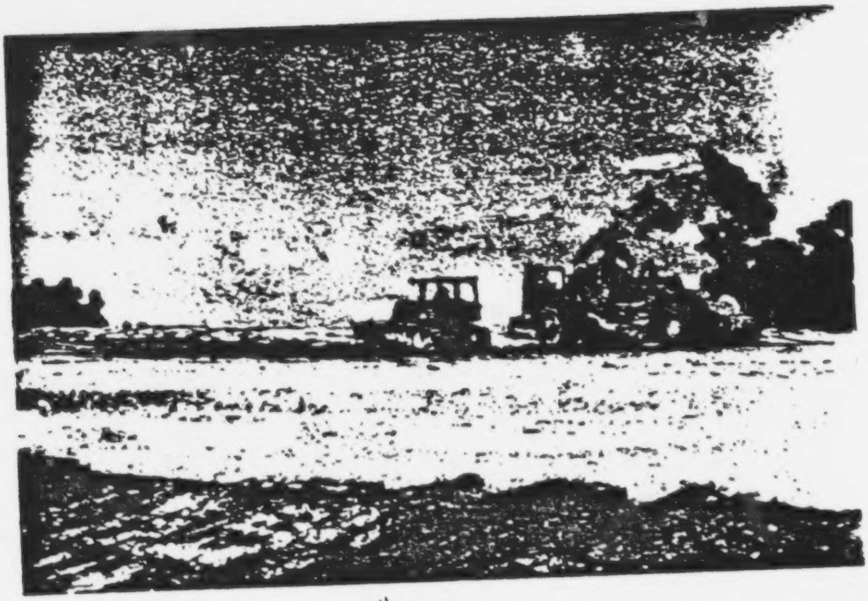

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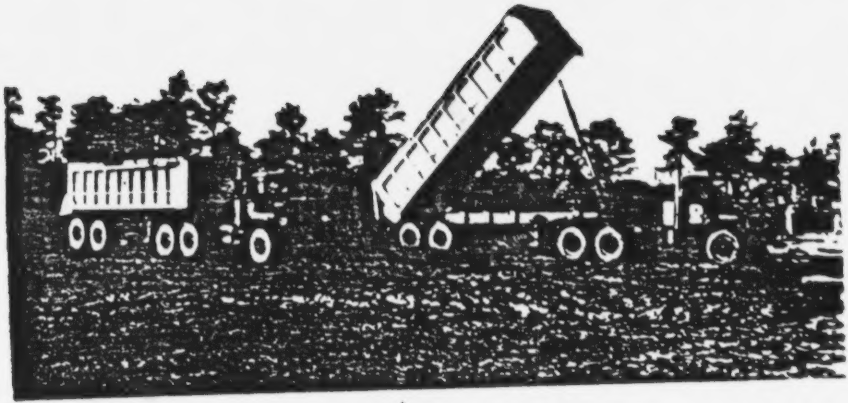

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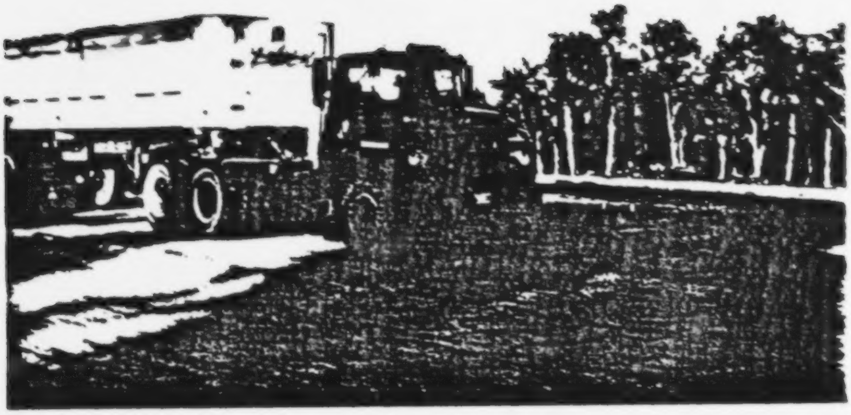

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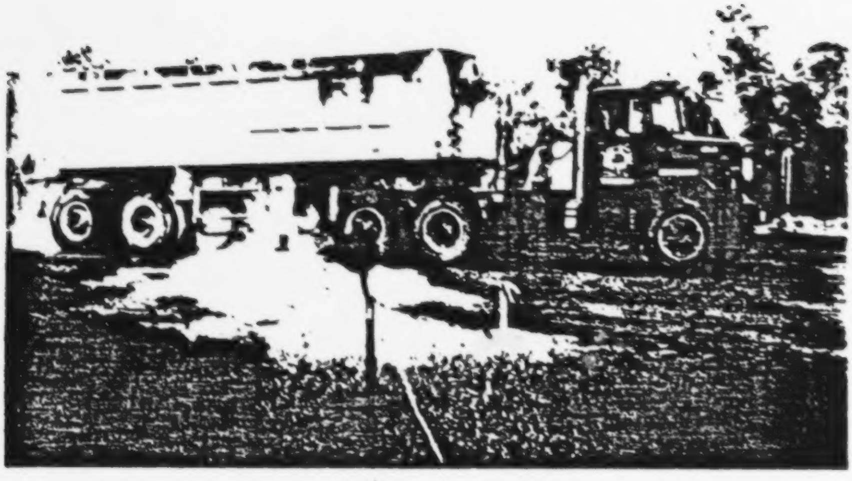

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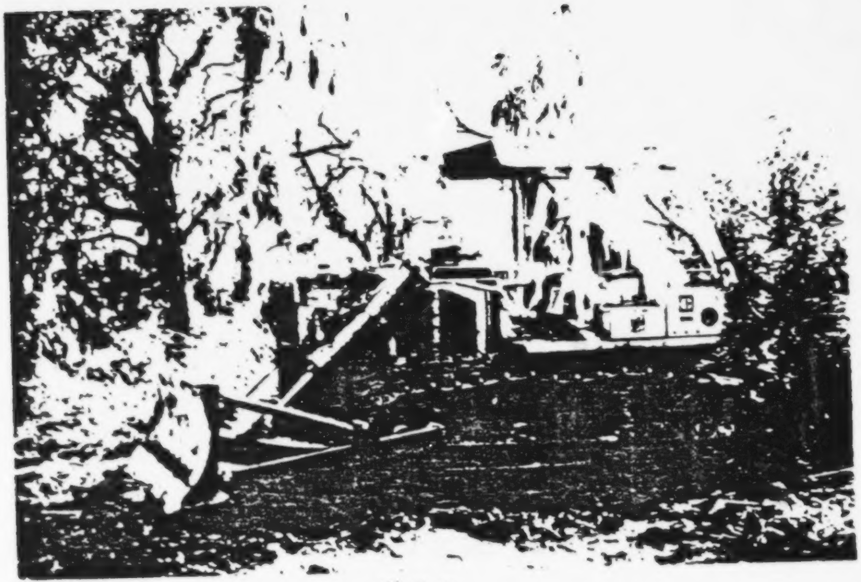

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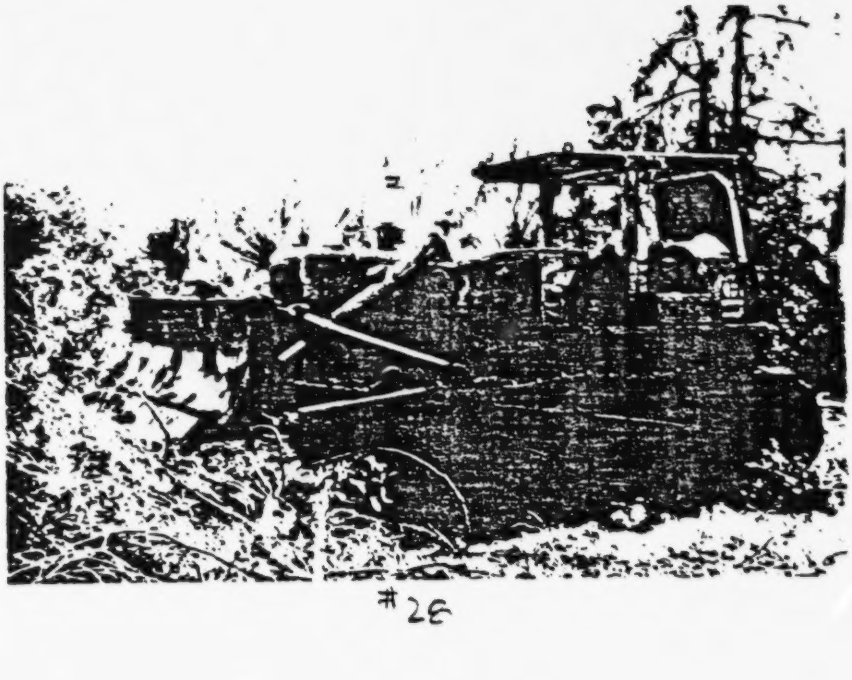

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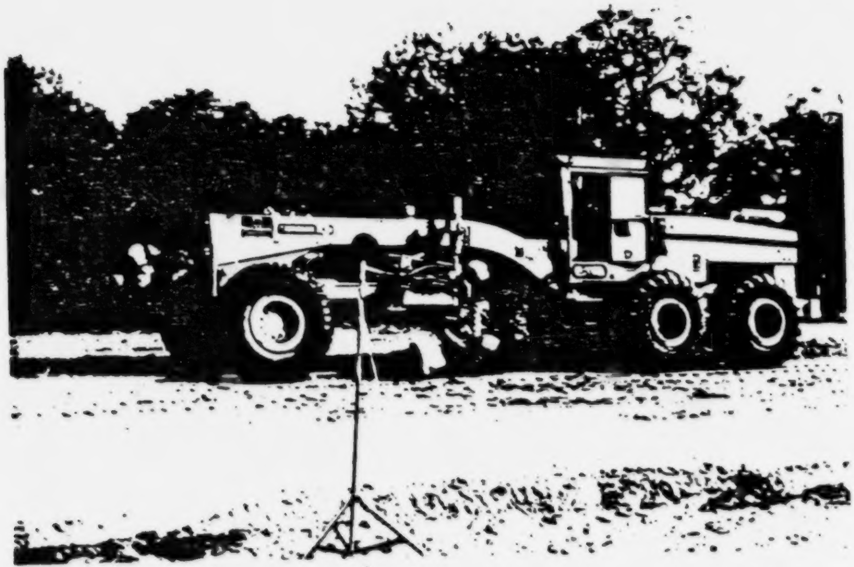

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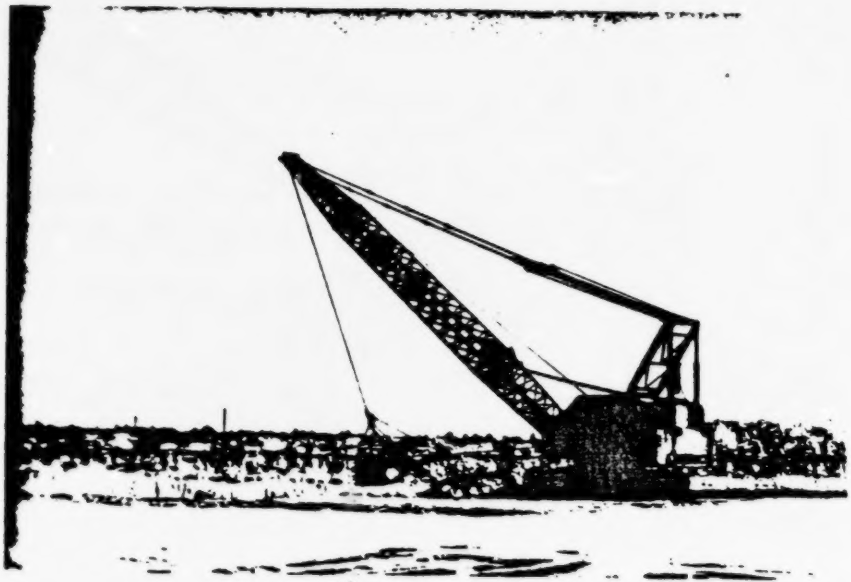

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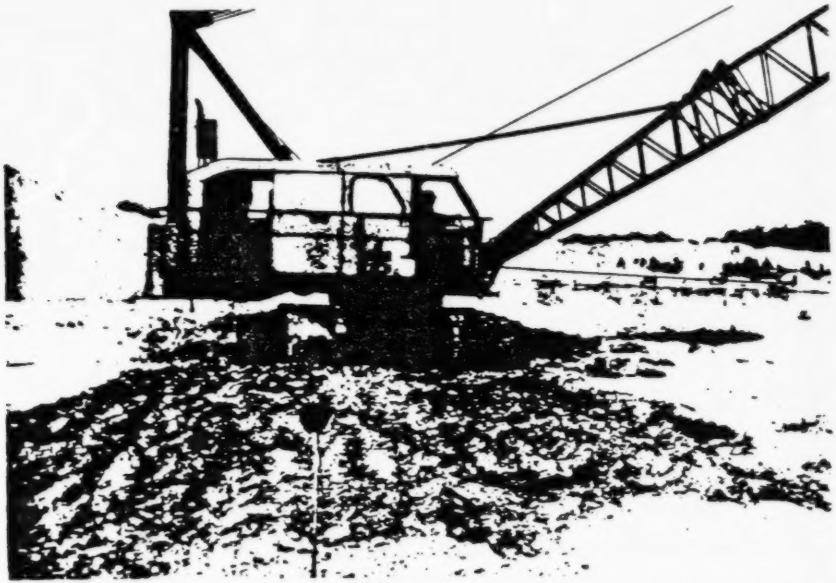

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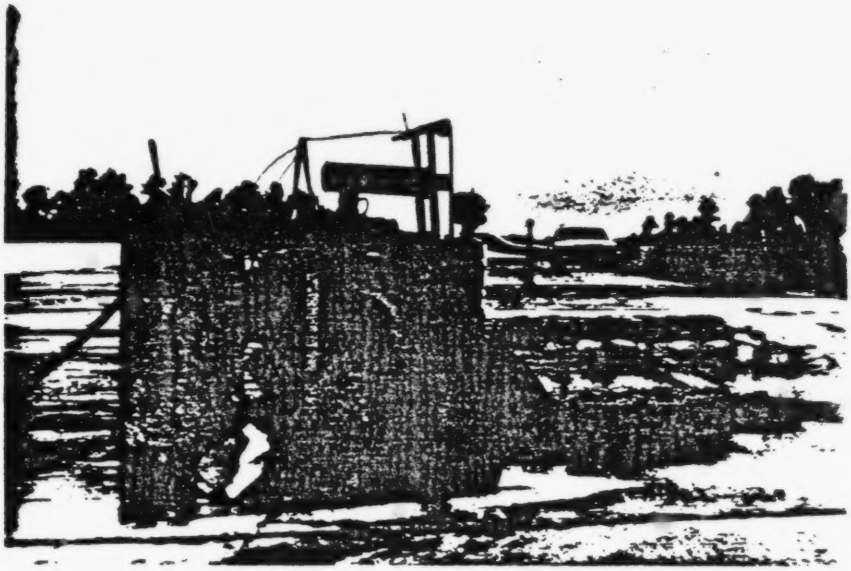

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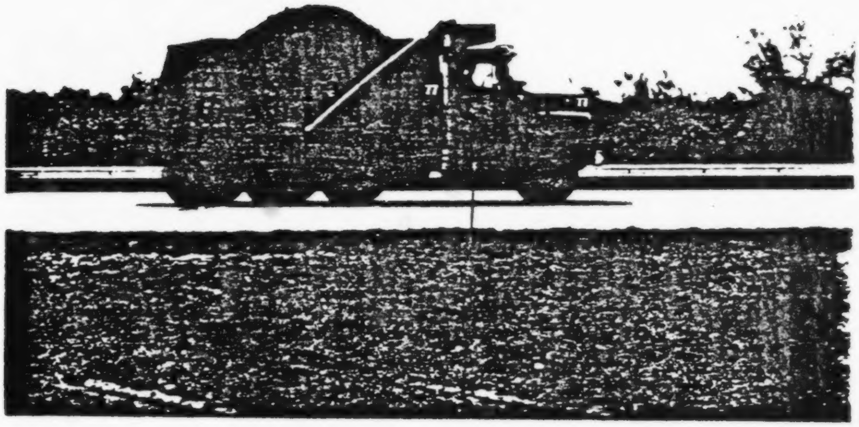

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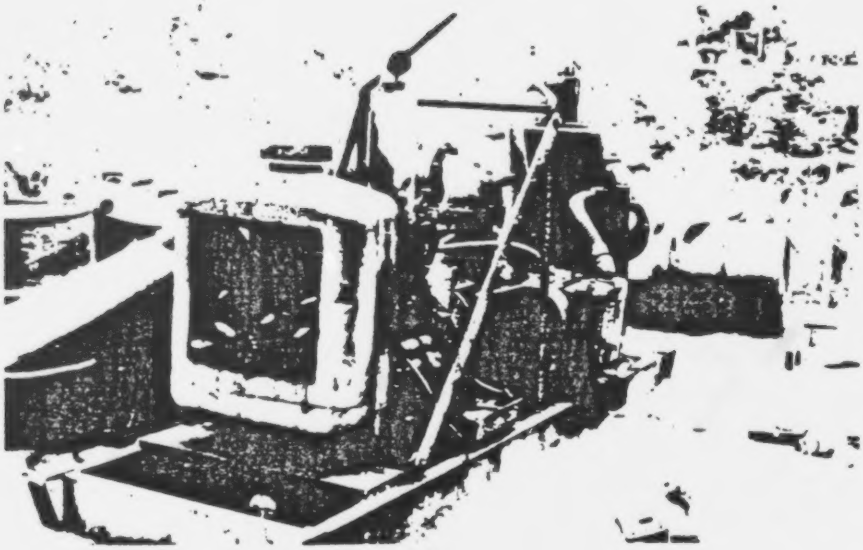
200

Roll #3

N/G

#2



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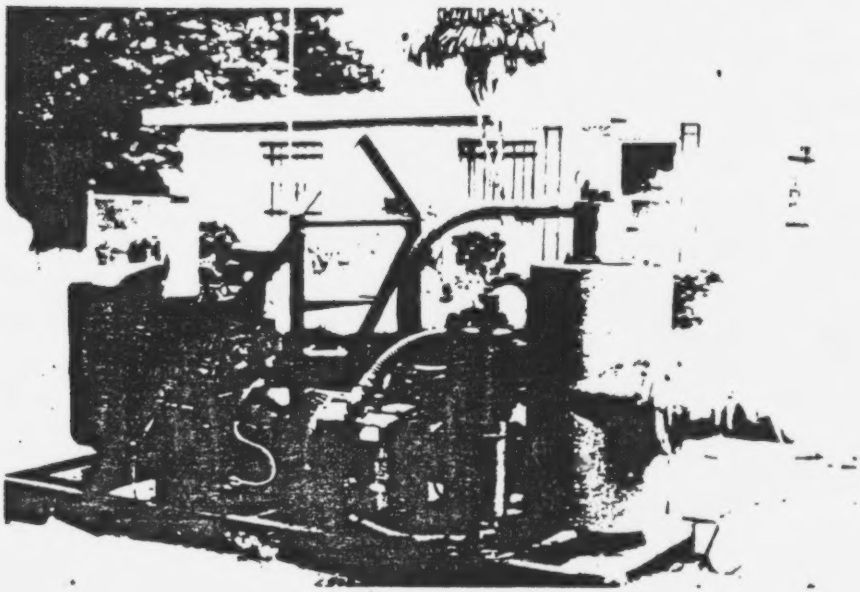

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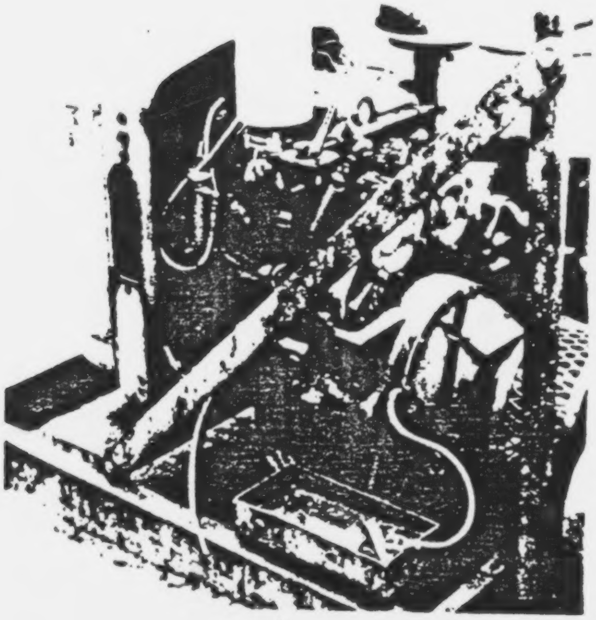

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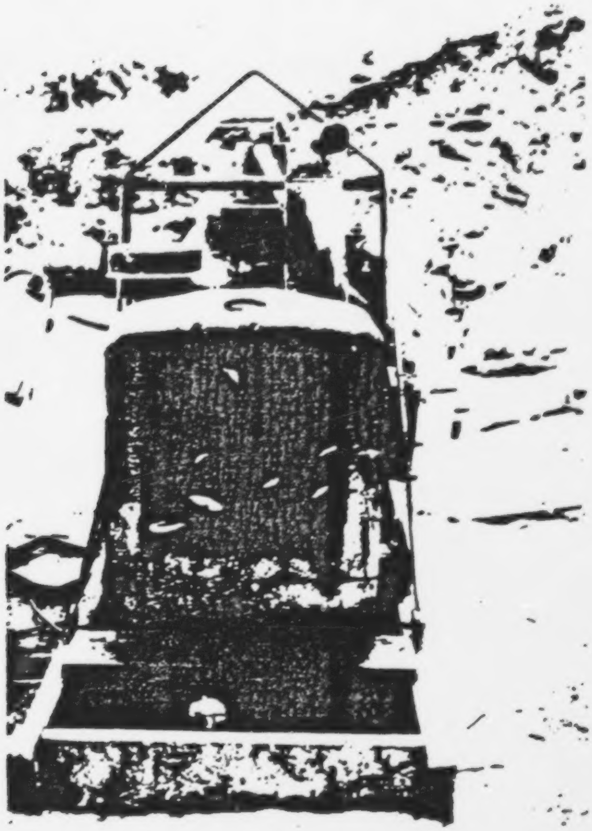

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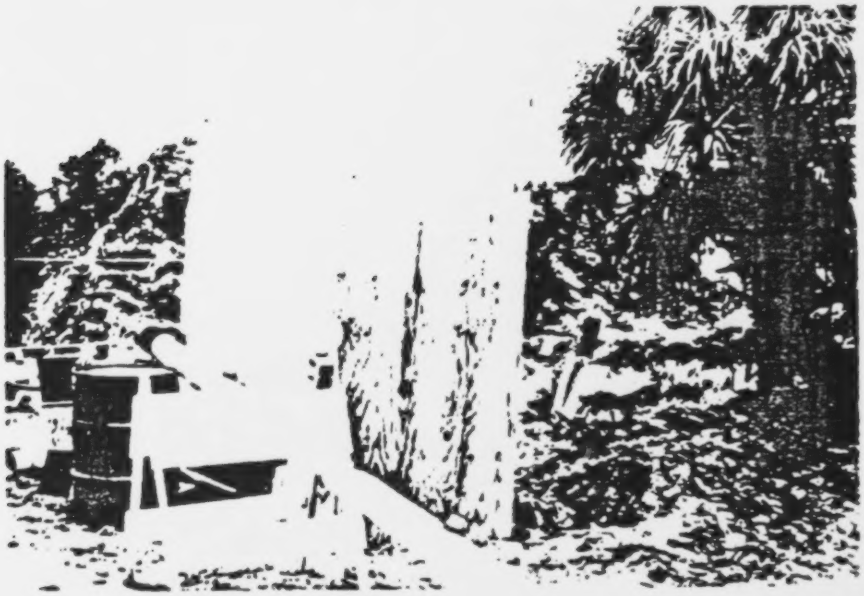

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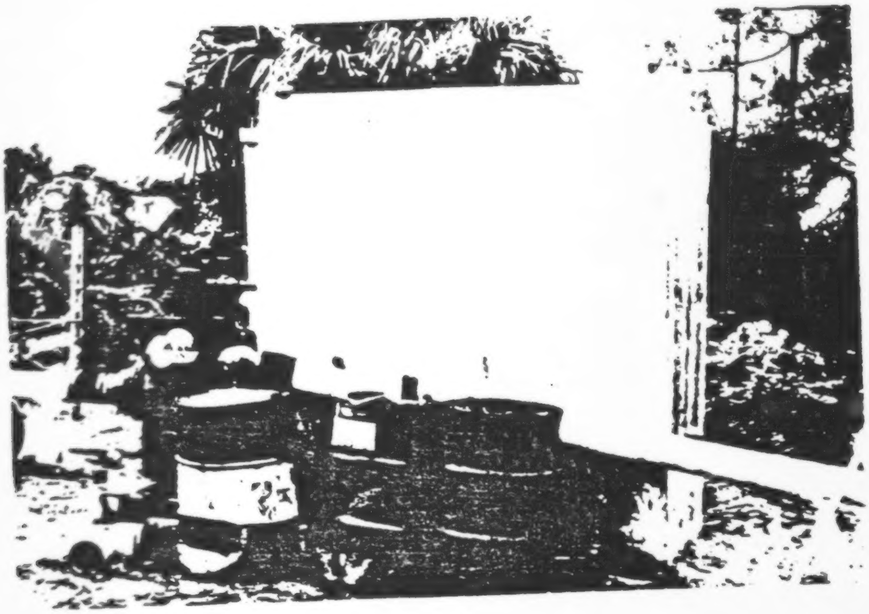

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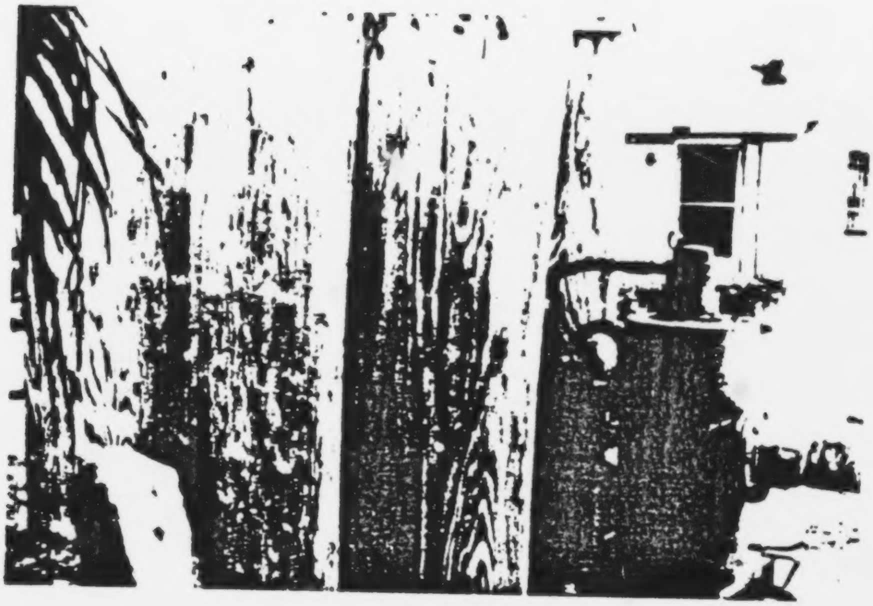

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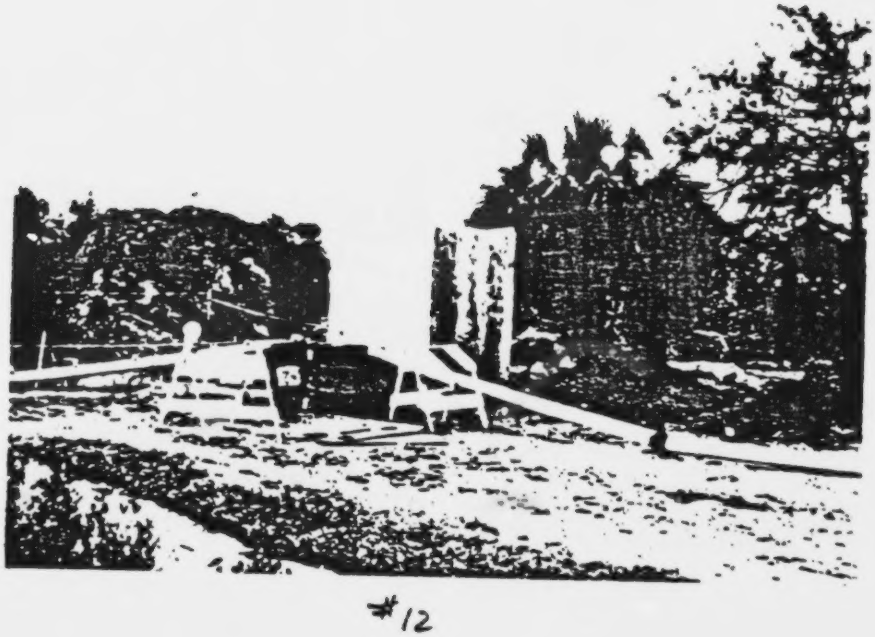

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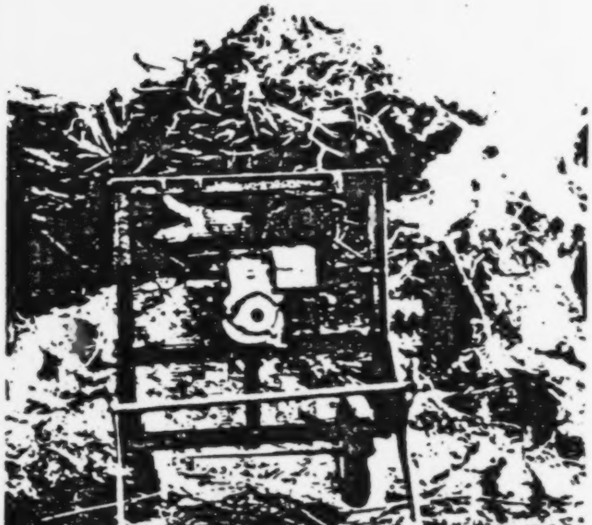

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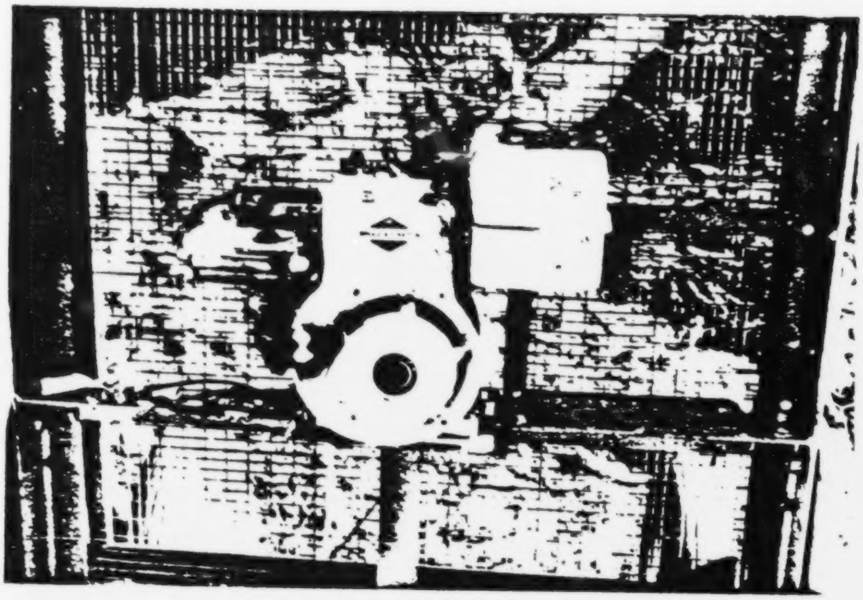

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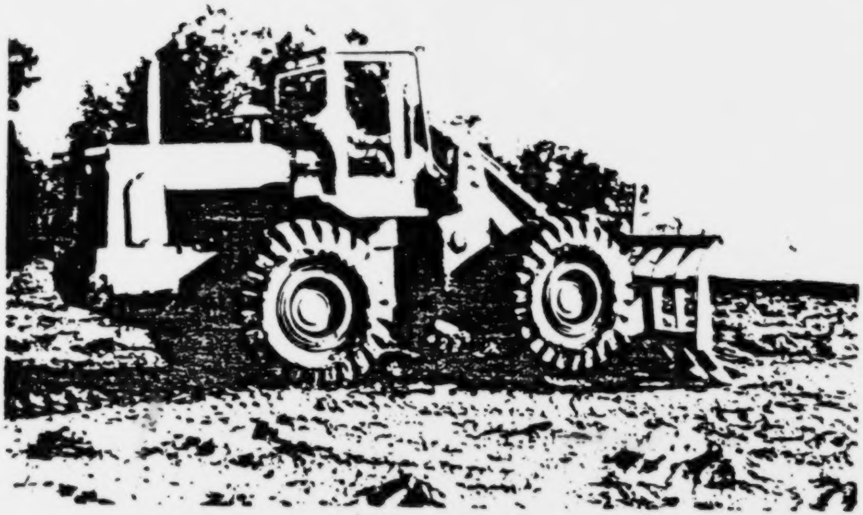

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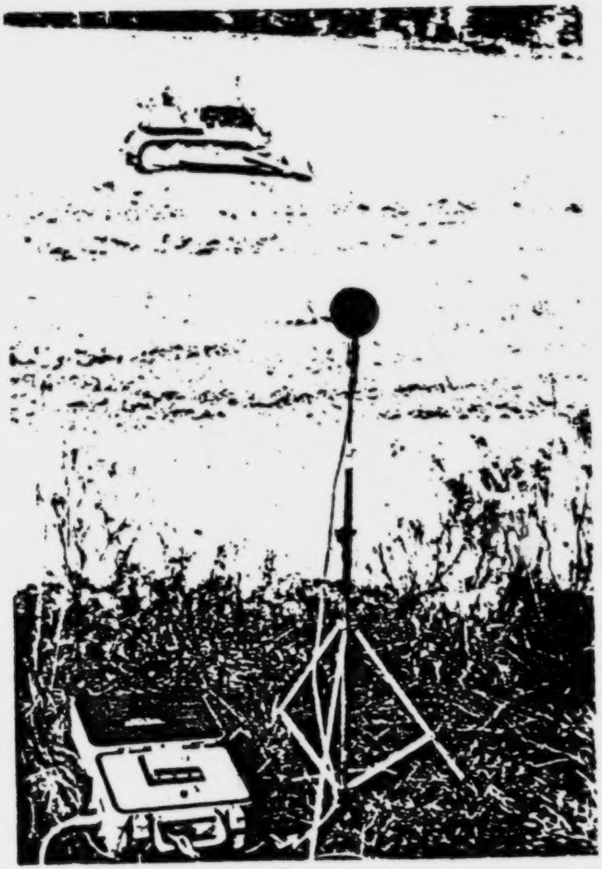

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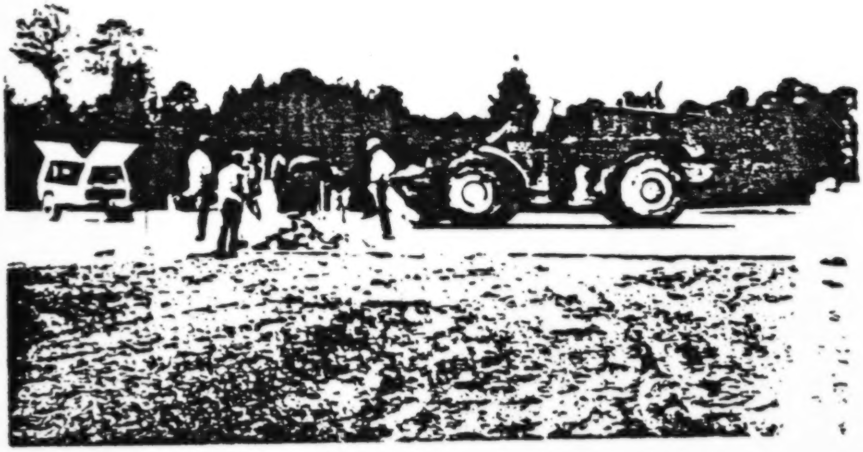

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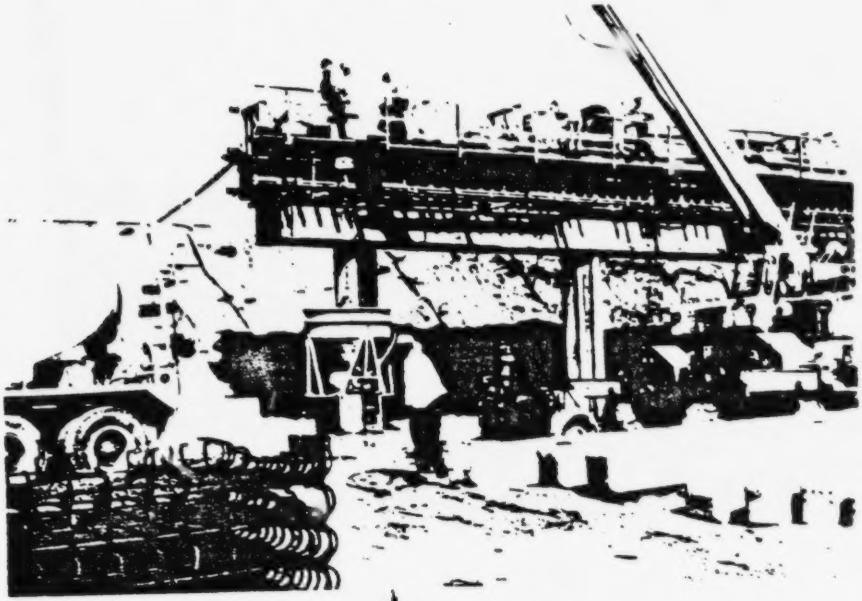

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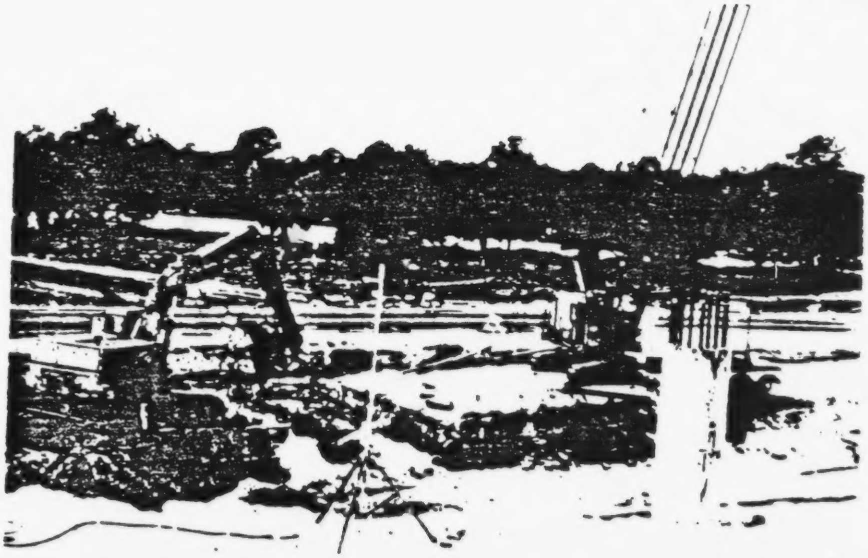

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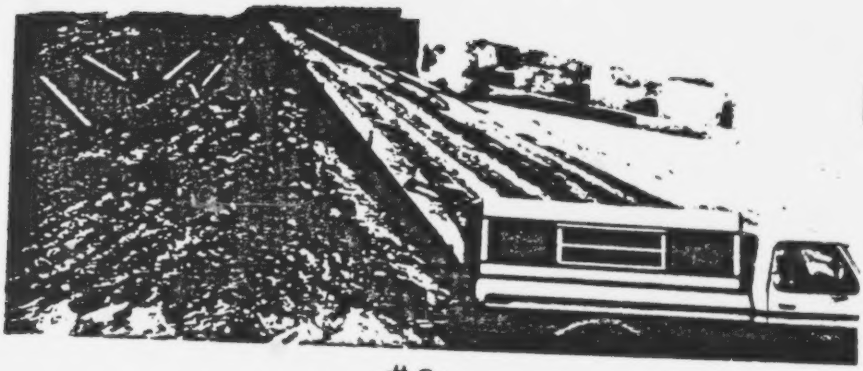

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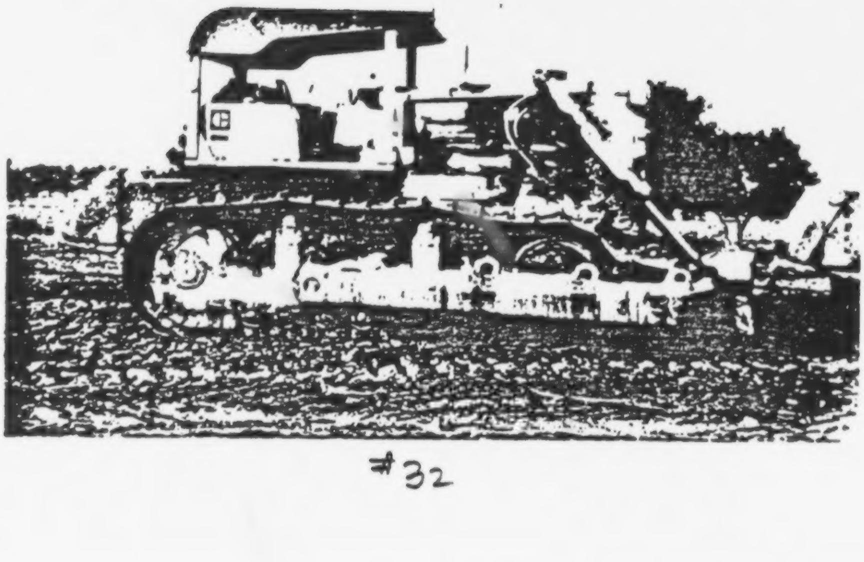

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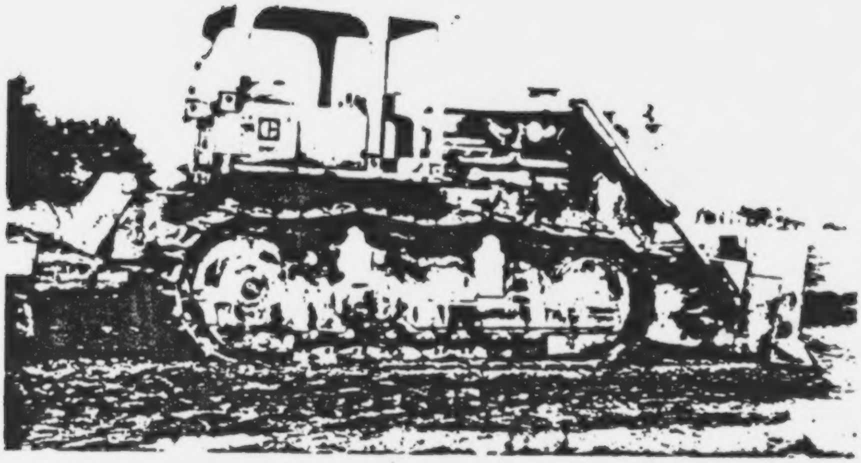

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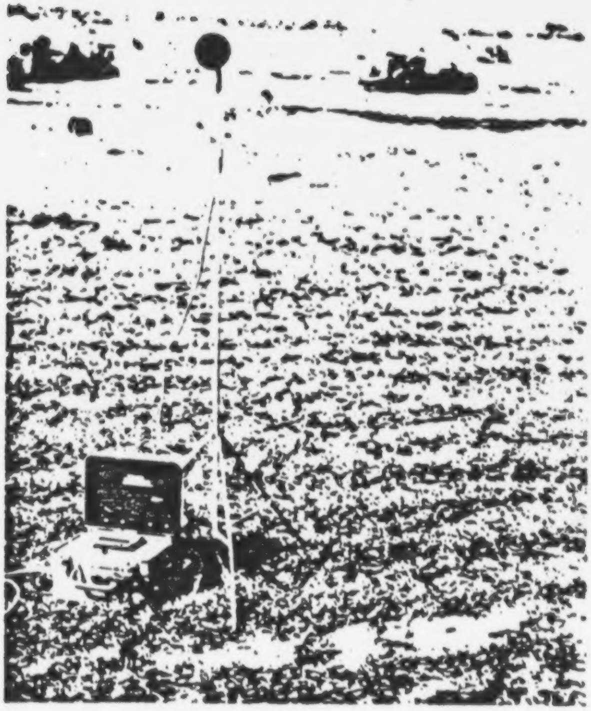

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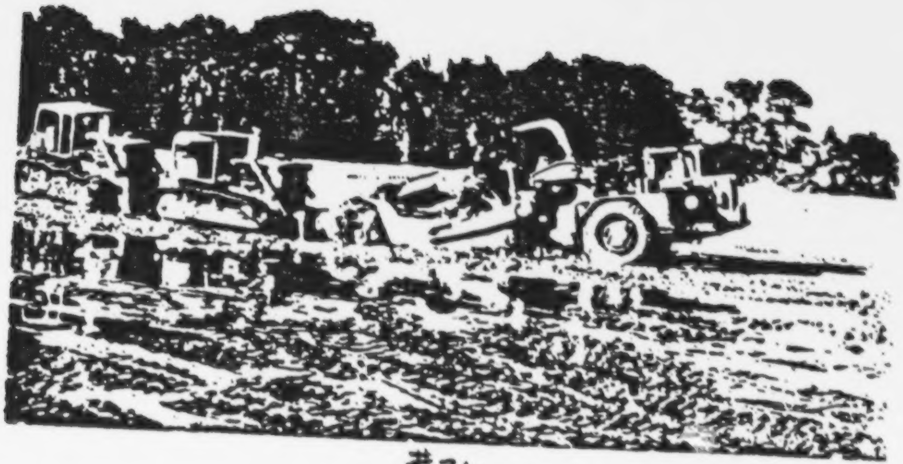

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